Madras Information

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New Deal for Tanjore Ryots

Story of the Tenancy Ordinance

On August 23, 1952, the Madras Government took a momentous step towards alleviating the mounting agrarian tension in Tanjore District. The Governor of Madras promulgated an Ordinance to provide for the improvement of agrarian conditions in Tanjore District, fixing the rents payable by tenants to landowners and the wages payable by landowners to pannaiyals in that district. Issued in exercise of the powers conferred by Article 213, Clause (1) of the Constitution, the Ordinance is called the " Tanjore Tenants and Pannaiyal (Protection) Ordinance, 1952."

The Preamble to the Ordinance which is given below indicates clearly the gravity of the agrarina situation which had developed in Tanjore District:

" . . . Whereas in the district of Tanjore the relations between landowners and their agents on the one hand and tenants and farm labourers on the other have become strained, resulting in the displacement of tenants and the dismissal of farm labourers and in agrarian crimes and disturbances;

" And whereas the situation threatens to cause deterioration in agricultural production; . . ."

Background of the Dispute

Situated in the rich Cauvery delta, Tanjore known as the Granary of the South, is one of the largest rice-producing areas in Madras State. As in other districts, there are zamin, inam and ryotwari holdings in Tanjore. A considerable portion of arable land in the district belongs to big landowners and institutions like *mutts* and temples.

The different systems of cultivation adopted are: waram (share-cropping), lease and *pannai* (direct cultivation through farm labour). While the first two are common to other districts also, the *pannai* system is unique to Tanjore, and is in vogue in most taluks of the district. Under this system, the mirasdar owning the farm employs landless labourers called pannaiyals for cultivation work on daily wages. These pannaiyals may be said to be hereditary employees on the farm, for their attachment to the farmstead can be traced back to many generations.

Prior to 1948, the pannaiyals received less than a *marakkal* (two Madras measures of paddy) on the days they worked. At harvest time they were paid the same wages as other casual workers. They also received certain other perquisites, including small shares of the net produce of the land they tilled.

Origin of the Troubles

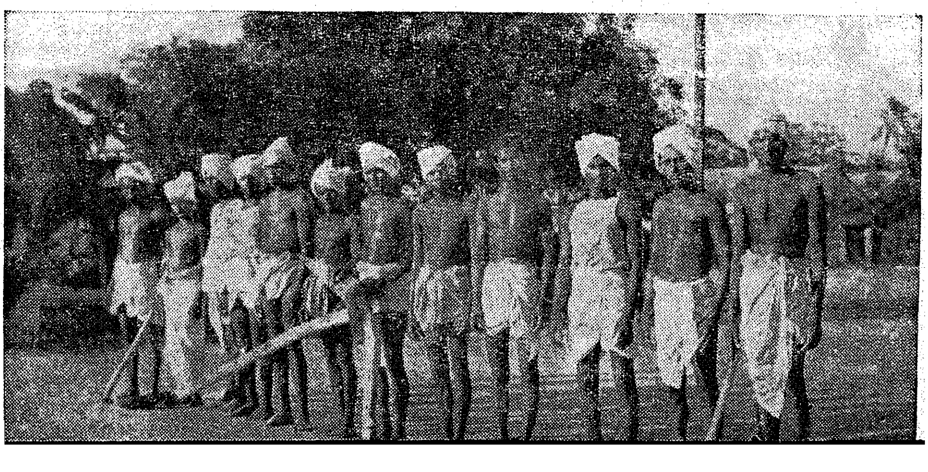
The march of time brought about a slow realization of rights and privileges in labour circles all over the land, and the agricultural ryots of Tanjore likewise became aware of rights denied and grievances unredressed. Agitators were not found wanting, who, under the guise of organising agricultural labour, helped to fan the flame of discontent. Political opportunism thus served to spread discontent and the relations between mirasdars and pannaiyals became quite strained.

The impact of war and the consequent sky-rocketing of prices worsened the situation. For the pannaiyals continued to get low wages and the waramdar, or tenant, an un-profitable percentage. The failure of the rains added to the troubles. While the ryots and the waramdars pressed for an equitable revision of terms, the mirasdars were unwilling to concede their demands, preferring the drastic measure of a complete change in the body of farm employees. Consequently the mirasdars started to evict pannaiyals who had been attached to their farms for generations, and imported labour from neighbouring districts.

Such extreme measures inevitably led to clashes, fall in production due to fear of riots, and inefficient outturn because foreign labour was not so experienced as the local pannaiyals.

On October 28, 1948, differences were somehow patched up, and an accord reached. By this pact, called the Mayuram (Mayavaram) Agreement, the daily wages of a man was raised to one *marakkal* and of a woman to three-fourths of a *marakkal*. The Agreement also assured the pannaiyal of one-seventh of the gross produce of the land he tilled.

Typical Pannaiyals of Tanjore



Strained Relations

The Mayuram Agreement, however, failed to provide adequate safeguards to ensure the working of the pact; and inevitably, breaches in the Agreement were reported, leading to forced evictions, clashes, conversion of traditional employees into casual labourers and consequent estrangement between the mirasdars and the pannaiyals.

In these circumstances the Government were compelled to adopt immediate steps to stem the rot. The explanatory statement attached to the Ordinance gives the nature of the crisis:

" For the past several months there have been strained relations in the district of Tanjore between some of the mirasdars and their tenants and in some cases between the mirasdars and their customary farm labourers or pannaiyals. Also there has been reason to believe that, out of fear of impending land reforms, several mirasdars have refused to renew lease agreements with their usual tenants and have displaced them, either bringing in new tenants or cultivating the land by farm labour. As a result of this, serious situations have arisen from time to time in this district gravely affecting the maintenance of law and order.

" The Ordinance seeks to provide for the reinstatement of cultivating tenants who were evicted by the landholder either in favour of some other tenant or in favour of his own pannaiyals. The Ordinance provides for five years security of tenure for each tenant and provides a machinery for settling disputes. It also provides a machinery for enquiring into the dismissal of farm labourers and for their restoration on just and equitable terms if the dismissal was wrongful. The Ordinance also provides for the fixation of minimum terms for the payment of waram and lease rents and also the minimum wages that shall be paid to agricultural labour. The Ordinance thus seeks to remove those causes of friction that have led to agrarian crimes and disturbances in Tanjore and which may lead to serious deterioration in agricultural production."

Provisions in the Ordinance

The Ordinance provides that where the produce is to be shared between the tenant and the landowner, the tenant shall be entitled to two-fifths of the gross produce or such higher proportion as may have been agreed upon; and where the tenancy provides for any rent, the tenant shall give the landowner three-fifths of the gross produce or such lower proportion as may have been agreed upon. The tenant is not bound by any agreement which gives him less favourable terms.

The Ordinance also fixes the wages payable to pannaiyals in accordance with the Mayuram Agreement of October 28, 1948.

The Ordinance does not apply in respect of land held by a landowner in any village if the land held by him in such village does not exceed one *veli* ($6\frac{2}{3}$ acres) which is either wet land or dry land irrigated from any Government source or three *velis* (20 acres) of dry land not irrigated from any Government source.

According to the Ordinance, the Government may, by notification, constitute for any specified area a Revenue Court presided over by an officer not below the rank of a Revenue Divisional Officer. No tenant can be evicted except on an application made in that behalf to the Revenue Court.

Under the Ordinance, the Government may also appoint any person for any area specified to be a Conciliation Officer. Whenever a landowner dismisses a pannaiyal he must make a report thereof to the Conciliation Officer within a week, and he will give his award after holding an inquiry into the case. The award will be binding.

No civil court can entertain any suit or other proceeding to set aside or modify any order, decision or award passed by any Revenue Court, Conciliation Officer or any other authority under this Ordinance.

Chief Minister's Appeal

Sri C. Rajagopalachari, Chief Minister of Madras State, visited Tanjore soon after the promulgation of the Ordinance, and appealed to the mirasdars, tenants and pannaiyals to regard the Tanjore Tenants and Pannaiyals (Protection) Ordinance as a divine measure and implement it in letter and spirit. He also warned them of the danger in allowing the agrarian situation to deteriorate further; if prompt steps were not taken in time to cure unrest, it would spread like fire and the mirasdars would ruin themselves and the country.

Addressing the mirasdars the Chief Minister declared: " Production cannot be improved unless you give the tiller of the soil sufficient interest in cultivation. I am not advising you to give away the land to the cultivators. It is to prevent such a calamity that I have brought in this Ordinance. If the tenant has a feeling that he will not be disturbed from his place for five years, he will put forth his best effort and improve production. I can say, you will

TO MIRASDARS: The Chief Minister told the mirasdars of Tanjore: "Production cannot be improved unless you give the tiller of the soil sufficient interest in cultivation."

find that after four years you yourself will want your tenant to remain permanently. So the five-year period of tenure is not also too much."

Addressing a large gathering of tenants, the Chief Minister said : " I shall visit you on the anniversary of the Ordinance, and if you are able to show increased production, it will be a happier welcome than the one you have accorded me today. I will also be happy to receive a garland of paddy straw instead of flower garland. That will be sufficient justification for the issue of the Ordinance. For that purpose you must all co-operate and work together as a happy family, forgetting everything else and concentrating on food production."

Need for Measures Explained

At a Press Conference the Chief Minister Sri C. Rajagopalachari answered some of the criticisms levelled against the Tanjore Tenants and Pannaiyals (Protection) Ordinance, 1952, and its amendment recently promulgated, and explained why such a reform had become necessary.

Prefacing his remarks with observations of a general nature, the Chief Minister declared :

" Wisdom and good government consist in achieving necessary changes in the social order without frightening any one. Social stability is not the excluding of changes, but in an imperfect world, is protected by changes from time to time. Stability itself demands change, and opposition to necessary change is opposition to stability either conscious or unconscious.

" These are general observations but they are my only answers to those whose sense of property and indefeasible rights following therefrom is inherently so strong that it has overcome all accretions of wisdom and statesmanship. I need not deal with those who do not like the author of the reform or his share in it and who would prefer worse things from others than this from me. What we have ordered in the Ordinance as it stands is conducive to good relationship and contentment and stability to the best of my judgment and those who have advised me. Every apparatus of production should be kept in fairly good order and like any other machine should be serviced from time to time. If the apparatus is a number of human beings with feelings and desires such as referred to by Shylock, all the more essential it is that we should examine the psychological position from time to time and do what is required for contentment. It is true that but for the mischief-makers there will be no discontentment ; but to discover the cause is not a remedy by itself. The new situation created by them has to be faced and the question is not who caused it but whether the remedy is good or bad.

" The Ordinance restores to all those who were evicted in Tanjore on account of recent happenings and apprehensions of their farms. The cultivating tenants who raised the last crop are protected. Certainly, the share of the cultivator has been increased from what it was and this I think is necessary. What is most important is that the farmer has been given security of holding for a certain number of years. This along with the increased share that is given to him, as against the owner of the land, is an adequate interest and incentive to increased production. The Ordinance puts down in words the customary practice in regard to expenses incurred for seeds, manure and cultivation.

" Some people who have had no knowledge of the fact or who ignore the existing practice have criticised the Ordinance in this respect on the ground that the tenant is not financially good enough for making all such expenses. The existing practice has been for tenant to bear all these charges. The tenants including the waram tenants have borne all these charges. The charge laid on him by the Ordinance has not been laid on him for the first time. There is no variation from the customary practice in this respect. The waram tenant was always debited with the charges incurred, if any, by the landlord in respect of these items. A good landlord will continue to help his tenant in this respect as he has hitherto done by giving him credit.

" The recent amending Ordinance has made it possible for the Conciliation Officer to allow a farmer who has to be evicted to continue in possession until he reaps the crop he has raised instead of converting the obligation into a debt against the tenant who has to be restored. Farm servants who under the Ordinance will get increased wages will also continue to have the old *manaikollais*, that is, little bits of land to be entirely exploited by them without sharing anything with the landowner. This is necessary in view of the conditions of housing in Tanjore District. Pannaiyals will also have a little but defined share in the total yield of the land in their charge. These and other changes made in the amending Ordinance seem to have received general welcome.

" A point has been discussed as to the varying degrees of fertility of the soil in the district. Such difficulties can never be prevented except by customs growing out of

TO TENANTS : Addressing the tenants and pannaiyals of Tanjore the Chief Minister advised : " You must all co-operate and work together as a happy family, forgetting everything else and concentrating on food production."

goodwill and experience which unfortunately have now been disturbed. Further, all laws must deal with generality of the cases and not with exceptions, and that is why it has long ago been recognised that hard cases make bad laws nor can we leave things unsettled without any regulation without danger to social order. Disparity of yield will affect both the landowner and the cultivating tenant. Town planners are aware of the difficulties of razing to the ground an entire old city and building according to plan. The same thing applies to agrarian reforms.

"Some persons desire that there should be no finality of issues because they live on live issues and the termination of disputes is not really desired by them. We should ignore criticism from such quarters. Arbitration and conciliation are good up to a point; but they become intolerable when they are dragged on by one party or another until mere pressure stands to win apart from merits. The Opposition demanded during the last sitting of the Assembly that the situation should be dealt with by Ordinance and I promised to do it and that has been done. It would have been wrong to protract the matter. The Legislature will have full opportunity to discuss the *pros* and *cons* in every detail."

Points Clarified

The Chief Minister also clarified the following points :—

1. The award of a Conciliation Officer is binding unless the parties appeal to a Revenue Court. Then the Revenue Court's decision would become final. Any court's decision was binding and could be enforced by law.

2. Conditions vary from district to district, and the Ordinance should be extended to other districts only where necessary and with such modifications as might be necessary.

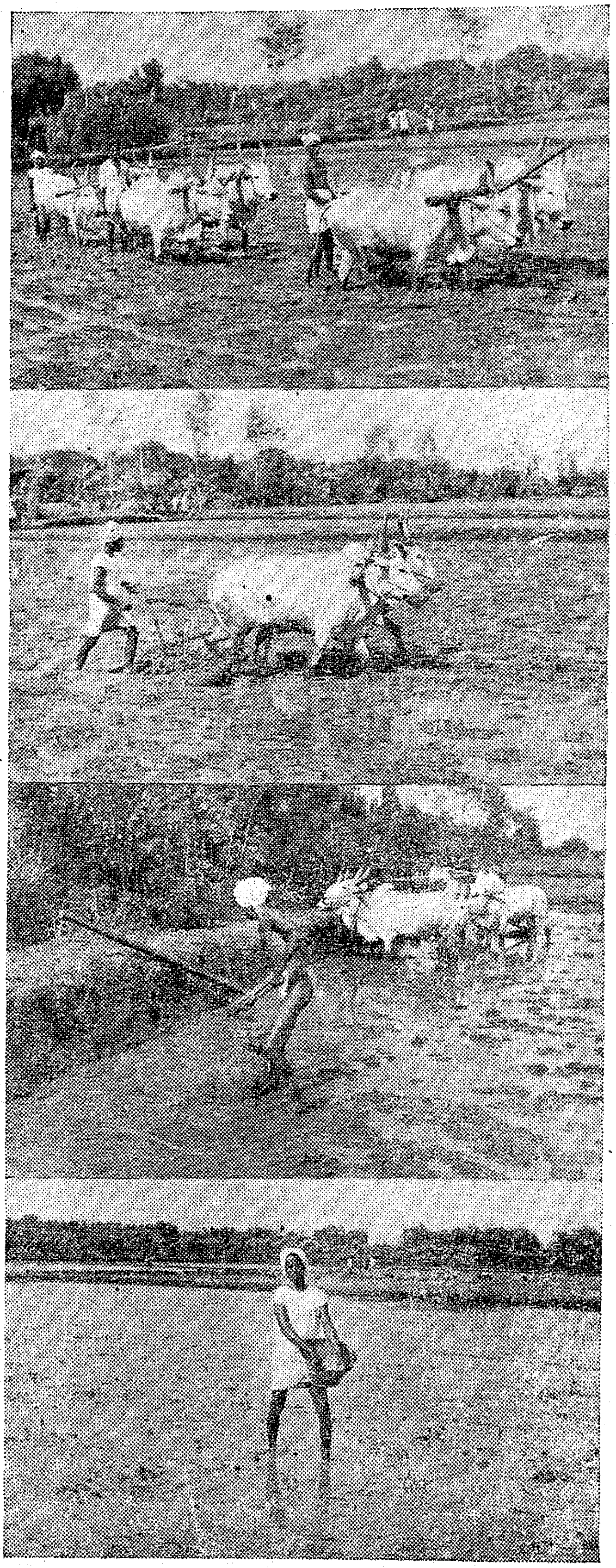
3. The Government were considering the matter of what changes were necessary to the Malabar Tenancy Act.

4. The signature of the tenant in a lease-deed is not necessary; it is the landowner who transfers rights to the tenant and his signature is enough.

5. Regarding land reforms, the proposals made in the recent Land Revenue Reform Committee's report were being considered.

6. Regarding the possibility of evictions on the ground of arrears, debts could not be wiped out and each case would be decided by courts. Certain debts were never recovered and certain other debts were overlooked. There were not too many such cases and no large-scale eviction as mentioned on the floor of the Legislature.

7. Catch-crops ought to go to the tenant; if the landowner wanted catch-crops, he could make them regular crops.



FARMING IN TANJORE : Right : *Ploughing ; Deep furrowing ; Cutting the land ; Sowing.*

Opposite page—left : *Transplanting ; Plucking seedlings ; Weeding; Winnowing ;* Right : *Measuring ; Carting ; Transport ; Stocking.*

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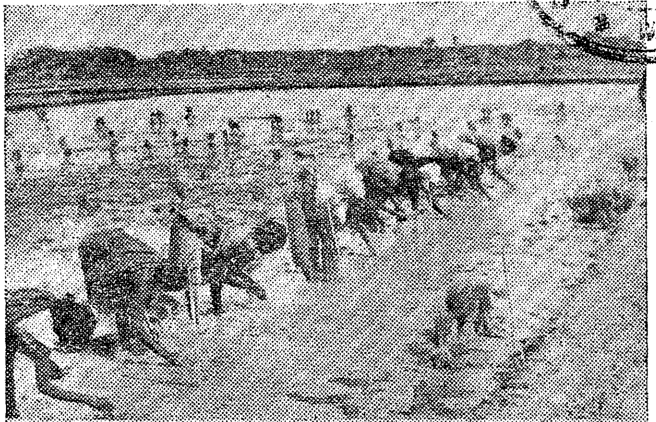

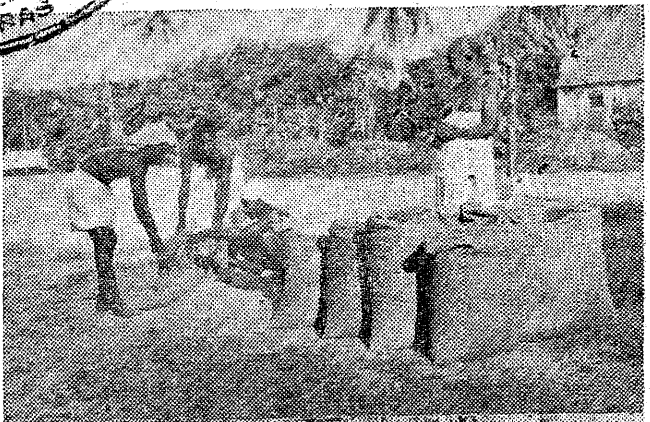
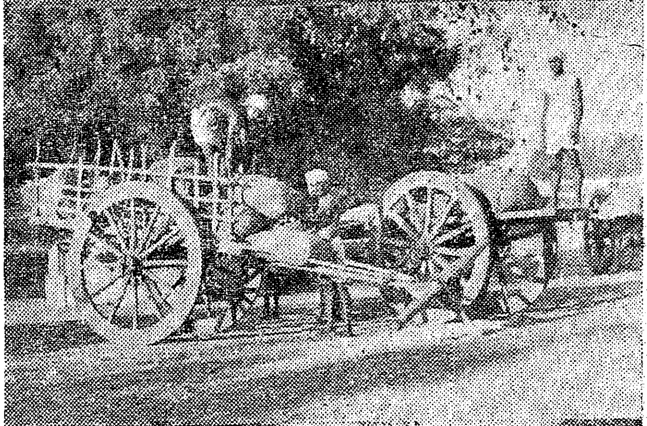

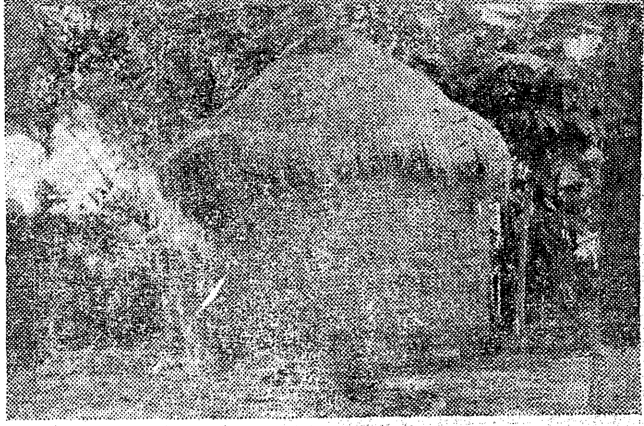

Dhoties and Saris for Handlooms

Chief Minister Reiterates Suggestion

" The question of reservation of the manufacture of dhoties and saris to the handloom industry is not a question of yardage, but of human families whose care is the obligation of the State Government and therefore of the Central Government," stated Sri C. Ragagopalachari at a recent Press Conference, reiterating the justice of the stand taken by the Madras Government in this matter.

" My demand on behalf of the handloom weavers, that dhoties and saris should be entirely reserved for this cottage industry," the Chief Minister said, has been opposed publicly by the Minister for Commerce and Industry, Government of India, during his short stay in Madras. This opposition is welcomed by the mill-owners of Bombay and Ahmedabad and the piecegoods merchants here. Some persons have been much concerned over the personal aspect of the matter. " It is not necessary for anyone to come to our assistance in maintaining our mutual goodwill and friendship. Mr. Krishnamachari has said enough about it."

"We are entitled each to defend our policies. I am convinced that this reservation, as I have proposed, is the only proper, just and economically sound solution for the conflict that has risen between the unprotected handloom industry and the long-protected mill industry. We are concerned not with private feelings but with the merits of the handloom cottage industry and its present position arising out of its dependence for yarn on the mill industry and the competition of the mills in a field which was entirely the monopoly of the Indian handloom all through the ages till recently. The mills have plenty of scope to produce cloth that could be tailored and could be used otherwise.

" Dhoties and saris are peculiarly Indian and could give adequate employment to the five million people engaged in the handloom industry. The total number of people engaged in the weaving section of all the mills in India would be much less than one lakh of workers. Actually, it has been calculated that they would be only 60,000. The number of men, women and children depending on the handloom in Madras State alone, I think, is five millions. The question is not a question of yardage but of human families whose case is the obligation of the State Government and therefore of the Central Government also.

'A Practicable Compromise'

" I am afraid the Union Minister made some error in his statistics; but nothing much hangs on that argument. You may take it that the mill production is round about 4,000 million yards per annum. The handloom production may be taken to be round about 2,000 million yards per year, most of which are dhoties and saris, whereas mill production of dhoties and saris has not been even up to fifty per cent of total output. Dhoties and saris have been a good field for exploitation for mills only in recent times. I would call it pilfering of pattern from the handloom to which the mills are not entitled. Considering the under-employment prevailing among millions of handloom weaving families, who cannot switch over to any other employment such as a handful of people in England or Scotland could manage to do, it is really ridiculous to talk of the handloom weavers of India going over to other occupations.

" It really amounts to a policy of allowing one million families in Madras or three times that number all over India to be wiped out of existence. This will not happen. Human beings do not allow themselves to be wiped out. Problems will be created in the meanwhile which Governments will not be able to solve peacefully. I wish to avoid this and have suggested a fair and practicable compromise which could be smoothly worked.

'Industry Cannot be Allowed to Die'

" We cannot allow the handloom industry to languish and die. That is the equivalent of the policy underlying certain statements made on this subject. It is absurd to go abroad for marketing the handloom cloth instead of providing for handloom weavers what is due in their own country within whose social condition and tastes and manners, their avocation has grown. It has been stated that there will be a cloth famine if dhoties and saris are reserved for handloom cottage weavers. This is a groundless apprehension. A few months ago, the Handloom Weavers' Society in Madras had Rs. 4 crores worth of dhoties and saris on hand which they could not dispose of and which they wanted the Government to buy. Does this indicate a cloth famine ?

"If anyone says that people took to handlooms on account of a boom, it would be quite wrong. Nobody takes to handloom weaving unless he is to that avocation born. No one can learn to weave crores worth of cloth simply by way of speculation. It is because he is a weaver by birth and is trained to do it from his early infancy that he weaves cloth. The mills with their machinery and paid labour and their extraordinary strong organization can produce four thousand million yards of cloth other than dhoties and saris, which can be used up for all requirements against nudity. And which can also be exported and easily marketed abroad.

'A Deepavali Gift to Weavers'

"The whole of the argument against my proposal arises out of want of imagination. I do hope that the Minister at the Centre will make up his mind and induce mill-owners of India to make a Deepavali gift to the handloom weavers this year. It will be a memorable step towards peace, stability and prosperity, and God will bless it and make it fruitful."

The Chief Minister was asked whether the public could afford the high cost of handloom cloth. He replied: " The public and the weavers have a way of adjusting themselves. The public cannot bear the starvation of the weavers either."

The Chief Minister finally declared: " Whatever the Government may do or may not do, the Government here or at Delhi, let us buy only handloom dhoties and saris for the next Deepavali."

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Khadi Development in our villages

Of the population of 56·95 millions in Madras State, nearly thirty-eight millions are dependent on agriculture for their livelihood. Agriculture by itself can never provide employment throughout the year. Even in the delta areas the peasantry have no work to do for four months in the year. In the dry tracts the off-season extends to even eight months in the year and as the crops depend on the monsoon, the fruits of agriculture are uncertain. How can a population forced to spend in idleness four months in the year on an average be ever prosperous? This explains the chronic poverty in our villages.

No other advanced country in the world is burdened with so much unemployment. In the United Kingdom, the percentage of unemployed to the total population in 1949 was 1·6 and in the United States of America it was 5·5.

In terms of money, this national waste can be calculated as follows :—

Excluding the children and the over-aged, the able-bodied under-employed among the agricultural population in the State may be taken as nearly 27 millions.

Taking the period of unemployment as only four months in a year on an average and supposing that the population is provided with work as in a famine season and paid wages at famine rates, their earnings would be :

27 millions × 100 days (at 25 working days in a month, for 4 months) × 6 annas per day = Rs. 101·25 crores.

This then is the lowest estimate of the cost of unemployment among the agricultural population in our State in a normal year. In a drought year the period of unemployment will be longer and the cost proportionately stupendous. The State's revenues from all sources amount to 60 crores of rupees per annum. The cost of unemployment amounts to more than two and a half times the annual revenues of the State. The real cost will be much in excess of this estimate, for we should remember that the value of the output of an individual working for even six hours at a productive occupation will be more than *six annas*.

As long as this huge waste of man-power continues, there is no hope of revitalising our villages. Gandhiji spoke the literal truth when he said :

> "*Without a cottage industry the Indian peasant is doomed. He cannot maintain himself from the produce of the land. He needs a supplementary industry.*"

The Industry for the Millions

Hand-spinning is sometimes spoken of as an unprofitable industry, as it can give only about *six* to *eight annas* for a full day's work. Facile suggestions have been made for the introduction of Japanese industries like manufacture of cycle parts, clock and watch-making, mechanical toys, etc., by providing cheap electric power in the cottages of the peasantry. The introduction of such industries is no doubt welcome where facilities exist, but they can absorb but a small fraction of the rural unemployed.

> "*We make little headway (in developing Cottage Industries) because we have an unclassified catalogue of industries for the people to choose, when we should know that there is only one industry it is possible to put before all. They may not all take it up. Let those who can and wish to, by all means, take up any other. But national resources must be concentrated upon the one industry of hand-spinning which all can take up now and beside which the vast majority can take up no other. It is not enough to say that hand-spinning is one of the industries to be revived. It is necessary to insist that it is the central industry that must engage our attention if we are to re-establish the village home.*"
>
> —MAHATMA GANDHI.

The workers who take to any such industry will have to devote themselves wholly to it and become skilled craftsmen. They must also have the necessary capital to instal the machinery and procure the raw materials. Such industries cannot be thought of as a spare-time employment for the millions of our agricultural population, men and women, young and old, who cannot give up the plough, the hoe and the sickle.

Hand-spinning, on the other hand, was, till less than two centuries ago, the universal cottage industry. The spinning tradition still lives in many of our villages, particularly in the cotton growing districts like Coimbatore, Ramanathapuram, Tirunelveli, Salem, Cuddapah, Anantapur, Guntur, East Godavari and Visakhapatnam. It can easily be revived. The charkha can be made by the village carpenter at a cost of less than five rupees from materials available in the village. It does not require any special skill. Above all, the product of the industry will supply one of the essential needs of the workers themselves. It is thus the cottage industry *par excellence* and is well suited to our rural economy.

The Madras Government's Khadi Scheme

The Madras Government can justly claim to have been the first State Government to take active measures for developing Khadi. Rajaji as the Premier in the first Congress Ministry that came into power in 1937, was responsible for enacting the Madras Regulation of Sale of Cloth Act, 1937. The system of licensing cloth dealers introduced by this Act provided for a levy of licence fee on dealers in mill cloth and was thus a measure of protection, albeit slight, for Khadi. Government also initiated a system of grants to the All-India Spinners' Association for developing Khadi in the State. The grants were utilised for distributing charkhas and starting spinning centres in many of the famine-affected areas of the State.

The Intensive Khadi Scheme formulated in 1946 was the first comprehensive scheme to develop Khadi directly through Government agency. The Scheme aimed at intensifying production of Khadi in selected areas with a view to make those areas self-sufficient in respect of cloth in terms of Khadi.

The Scheme has been working in the following seven centres since the beginning of 1947:—

Name of the centre. (1)		Number of villages included in the centre and the districts in which they are situated. (2)
1 Avanashi	..	28 villages of Coimbatore District.
2 Vellakoil	..	12 villages of Coimbatore District.
		9 villages of Tiruchirappalli District.
3 Chinnasalem	..	7 villages of Salem District.
		61 villages of South Arcot District.
		4 villages of Tiruchirappalli District
4 Payyanur	..	9 villages of Malabar District.
		6 villages of South Kanara District.
5 Santanutalapadu.		21 villages of Guntur District.
6 Erragondapalem.		19 villages of Kurnool District.
7 Kotauratla	..	31 villages of East Godavari District.
		18 villages of Visakhapatnam District.

In these centres the Government provide all the facilities necessary for the villagers to produce and use their own Khadi.

The ideal home-spun Khadi is that which is made out of yarn spun in one's own home out of kapas hand-picked from cotton cultivated by oneself. Khadi work therefore begins with the cultivation of cotton. The centres supply seeds of approved varieties of cotton to the ryots in order to encourage them to grow their own cotton. But as the majority of the spinners are not growing cotton at present, cotton has to be supplied by the Government. Cotton is therefore procured in the season, stocked in the centres in bulk and supplied to the spinners whenever they require it at cost price.

The spinners are encouraged to gin and card the cotton themselves at home. Hand gins and carding bows are also supplied to them at cost price; guts for the carding bows are supplied at one-third of the cost price. Charkhas are supplied to all intending spinners without any initial payment. The cost is recovered in easy instalments from out of the yarn spun by them. Trained workers have been employed to teach all the processes—ginning, carding, silvering and spinning—to those who wish to learn. Weavers are secured where there are no weavers at present, with a view to enable every village to have all its yarn woven into Khadi in the village itself.

The spinners can utilise the yarn spun by them to make their own Khadi and sell the surplus yarn to the Centre Khadi Officers. The Centre Khadi Officers utilise the yarn for producing Khadi which is available for sale to the non-spinning families.

The weavers have to be paid higher wages for weaving Khadi than for weaving mill-yarn. This is one of the reasons for the higher price of Khadi. With a view to promote self-sufficiency among spinners, the Government offer them a small subsidy varying from about 2¼ to 4 annas per yard to offset the higher weaving wages. The amounts paid as subsidy every year since the inception of the Scheme are given below:—

Year.	Amount. RS.	A.	P.
1946–47	277	4	0
1947–48	44,222	3	3
1948–49	51,993	4	0
1949–50	44,456	13	6
1950–51	43,770	15	3
1951–52 up to 31st March 1952.	50,255	2	6

A Centre Khadi Committee for each centre and Village Khadi Committee for each village or group of villages have been formed. The main function of these Committees is to create the necessary enthusiasm for the Scheme by house-to-house visits and to secure at least one spinner from every family.

Though the goal of "one charkha in every house, and one loom in every street" is still for off, the progress made so far is encouraging, as can be seen from the following figures:—

Total number of families resident in the seven centres: 84,636.

	At the inception of the Scheme.	On 31st March 1951.	On 31st December 1951.
Total number of spinners in all the centres.	26,459	33,578	43,627
Number of looms ..	..	1,225	1,937

The production of Khadi in these centres has averaged 6·5 lakhs of yards per annum during the first four years, i.e., up to the end of 1950–51. For 1951–52 the final figures are not yet available, but the figures up to February 1952 indicate that the production has nearly doubled during the year. Besides the production on Government account mentioned above, about three lakhs of yards are produced by self-spinners under the Scheme.

Gandhiji warned nearly 25 years ago that it was wrong for the handloom industry to rely upon an unfailing supply of mill-yarn. He pointed out that handloom weaving and mill weaving were not complementary propositions but mutually antagonistic. "To make continuous improvements in their machinery and continuous encroachments on handicrafts is the objective of great industrialists. Indeed it is the very condition of their existence."

Time has proved the truth of this warning. In spite of a great increase in the number of spinning mills, the handloom weavers are today unable to get yarn for their work due to the fact that the mills have increased their weaving capacity also. The handloom weavers themselves are beginning to realise that their future is linked up with the future of handspinning.

In view of the distress caused among the handloom weavers the Government have been examining the possibility of organising more centres for producing Khadi.

The Extensive Khadi Scheme is intended for areas where Khadi has taken no root already. In such areas, it will be necessary to prepare the ground and introduce a sufficient number of charkhas before an Intensive Khadi Centre can be started. Under this Scheme, charkhas are supplied to intending spinners at about half the cost price. Cotton as well as the implements necessary for carding, silvering, etc., are supplied to the spinners at cost price. A Khadi worker has been appointed to give the necessary training to beginners and also to arrange for the weaving of the yarn. A subsidy is given to spinners under this Scheme also, to encourage them to use the yarn for making their own Khadi.

The Scheme has so far been introduced in 93 firkas in 22 districts.

Great Strides in Harijan Welfare Work

By DR. M. V. KRISHNA RAO, Minister for Education and Harijan Welfare

Many of you may not be much acquainted with me in public life, but you may be interested to know that I have devoted a good part of the past thirty years to social service, particularly for the Harijan community. I was indeed very happy when the subject 'Harijan Uplift' was entrusted to me and more so because Education, which is so closely connected with Harijan Uplift, has also been put in my charge. It is the far-sighted statesmanship of the Chief Minister that has been responsible for these two subjects 'Harijan Uplift and Education' being entrusted to one and the same Minister. As some social reformer observed, education is the lever by which we can lift the down-trodden and socially backward classes to the level of the other advanced communities.

Since assuming charge of my office, I have visited the districts of Coimbatore, Madurai, West Godavari, Visakhapatnam and Guntur. Wherever I went, I have found a considerable change in the outlook of the so-called Caste Hindus in regard to the problems of untouchability and Harijan uplift. Untouchability is a word which has been removed from the dictionary of right-thinking and civilised people by the Constitution of India. We, of this State, must be particularly proud because the Government of this State forestalled the reforms introduced by the Constitution of India. All will recall that red-letter day in the history of Harijan uplift in this State, when, in 1938, under the able and wise statesmanship of Rajaji who is also happily at the helm of affairs today, the Harijans of Madurai were enabled to enter and worship at the famous Meenakshi temple at Madurai. The Madras Temple Entry Authorization Act and the Madras Removal of Social Disabilities Act soon followed, prohibiting the practice of untouchability in all forms by law. Offences under these Acts have been made cognisable. The district authorities have special instructions to see that the provisions of these Acts are enforced rigidly.

As regards the progress of Harijan uplift work, I do not propose to give a historical retrospect, because Ministers and Government officials have already dealt with this subject before, both through this medium of the Radio and in print. For my purpose, standing as I am on the threshold of my tenure of office as Minister for Harijan Uplift, it would suffice briefly to recapitulate the results so far achieved and to indicate in a broad manner the problems that still lie ahead of us and with which we will have to grapple resolutely to attain the goal set for us by the late-lamented Father of the Nation.

The Harijan welfare work that is done by this State is given in a small pamphlet issued by the Director of Information and Publicity, Government of Madras, under the title "H rijan Welfare in Madras St te." Broadly speaking, Harijan uplift in this State consists of the following ameliorative measures.

Education

As I have already pointed out earlier, the Government attach very great importance to the problem of educating members of the Harijan communities. This is but natural in a Welfare State with Adult Franchise. The solicitude of the Government in this regard can be best seen in the Budget provision for the purpose mentioned below :—

Year.	*Total provision in the Budget.*	*Provision for Education.*
	RS.	RS.
1951–52	1,10,47,000	85,00,000
1952–53	1,12,72,040	87,09,040

The educational facilities provided consist of scholarships, both residential and non-residential, provision of free mid-day meals in Elementary schools run by the Harijan Welfare Department, boarding grants tenable in hostels recognised and subsidised by the Government, maintenance of hostels directly run by the Government, stipends for professional courses and non-recurring grants to children studying in Aided Elementary schools. The progress made in the field of education can be seen from the expenditure incurred in the past few years on the following activities of the Department.

Year.	*Boarding grant.*	*Scholarships and stipends.*		*Mid-day meals.*	
		Students.	*Amount.*	*Schools.*	*Amount.*
(1)	(2)	(3)	(4)	(5)	(6)
	RS. (LAKHS).		RS. (LAKHS).		RS. (LAKHS).
1947–48 ..	5·35	5,980	2·20	1,194	11·15
1948–49 ..	10·08	7,698	3·08	1,153	12·31
1949–50 ..	12·84	13,969	5·47	1,228	12·52
1950–51 ..	17·14	17,732	7·12	1,349	15·72
1951–52 ..	21·09	..	9·96	..	18·18
1952–53 ..	22·09	..	9·62	..	17·00

[Budget Provision (including Part II Provision) proposed.]

Besides, all Harijan pupils in Elementary schools and High schools and students in Arts and Professional colleges are exempted from the payment of tuition fees. The quantum of tuition fees foregone by the institutions is borne by the Government. The result of the expenditure incurred on education can be seen from the increase of teachers employed and the number of schools as shown in the statement below :—

Year.	*Number of schools.*	*Number of teachers.*	*Number of pupils taught.*
1947–48 ..	1,194	2,469	84,432
1949–50 ..	1,290	2,834	98,744
1950–51 ..	1,349	2,970	98,007

Provision of House-sites

The housing problem is one of the most difficult to tackle. The more one attempts to tackle it, the more it grows in magnitude and complexity. The Government have been assigning lands at their disposal for house-sites to Harijans wherever possible both in urban and rural areas. In the rural areas, they are providing house sites to Harijans who do not already own house-sites, by acquiring private lands. House-sites are provided in cases where the existing cheries are congested and also to avert threats of eviction of Harijans from private lands and for shifting of cheries due to insanitary conditions prevailing in the existing places. Prior to 1936, the practice had been to recover the entire cost involved in the acquisition from the assignees in annual instalments. In 1936 the policy was revised, according to which the Government undertook to bear the entire cost of acquisition of the land required for common and communal purposes and also as a special concession, to pay half the cost of the land required for house-sites subject to a maximum of Rs. 150, Rs. 250 and Rs. 350 per acre in the case of dry, garden and wet lands, respectively, the balance being recovered from the assignees in easy annual instalments not exceeding five. In 1949, the Government liberalised their policy and have undertaken to provide every Harijan family including converts from Harijans who do not already own any house-site, with house-sites at the rate of three cents in wet and five cents in dry areas, the assignment being free of cost, except in cases where the assignee can afford to pay. In urban areas, however, acquisition is resorted to only in cases where the Harijans pay the entire cost of acquisition.

In the case of Tanjore District, where the Harijans including agricultural labourers were reported to be in danger of eviction from their maniakats by the mirasdars, the Government sanctioned a special staff in 1950, to provide them with house-sites by assignment of Government lands and acquisition of private lands. The special staff has been working from September 1950 onwards. A sum of Rs. 2,44,288 has been spent so far in this district alone till now.

The following figures show the progress made during the years 1948–51 in the matter of provision of house-sites :—

Year.	*Assignment of Government land.* Extent.	*Assignment of Government land.* Number of house-sites.	*Acquisition of private land.* Extent.	*Acquisition of private land.* Number of house-sites.	*Amount spent on acquisition.*
(1)	(2)	(3)	(4)	(5)	(6)
	ACRES.		ACRES.		RS.
1948–49 ..	16·34	425	35·32	497	32,571
1949–50 ..	8·72	191	41·05	576	30,853
1950–51 ..	247·91	3,999	204·84	3,500	2,35,716

Provision of Sanitary Amenities

The Government also provide wells, pathways, burial grounds, playing enclosures, lavatories, etc., for the benefit of Harijan inhabitants. In the year 1950–51, a provision of Rs. 1,47,040 was made for expenditure on these amenities. During the year 1951–52, an amount of Rs. 1,14,100 was provided for the same purpose.

Enforcement of Provisions of Temple Entry Authorization Act and Civil Disabilities Removal Act

The Temple Entry Authorization Act and the civil Disabilities Removal Act were passed as early as 1939 and were suitably amended in 1947. Although these Acts have been in force for more than a decade, there are still stray cases of harassment of Harijans by the so-called Caste Hindus. During the year 1950–51, thirty-seven such cases were detected and proceeded with and 22 ended in conviction. Instances of this kind were promptly dealt with by the District authorities under the Law. Social service bodies, notably, the Harijan Sevak Sangh, have also co-operated with and assisted Government officials in detecting such cases and bringing to book offenders. In this connexion, I need hardly stress that however much the Government may try to put an end to the curse of untouchability by legislation, without the co-operation of the people and social service organizations, it would be an uphill task, nay, an impossible one, to achieve any measure of success in this field.

So much for the work already done in the field of Harijan uplift. Earlier, I have alluded to the task ahead. We have to endeavour and bring about a sincere and unreserved change of heart among the so-called higher classes towards the Harijans who have been regarded and treated as untouchables. In this connexion, I may say that the Government have rightly accepted the suggestion to observe the 30th of every month, regarded as sacred by the people of this country on account of the death of Mahatma Gandhi on that day, as Harijan Day. This day is being observed throughout the State in nooks and corners of all taluks and villages under the guidance of District officials, non-officials and with the co-operation of the general public. The object of these celebrations is to focus public attention on the unfortunate and pitiable lot of the Harijan communities and to enlist their sympathies in the work of Harijan uplift. If these celebrations could bring about a genuine change of heart among all who regard the Harijans as untouchables, the purpose will have been well served.

I take this opportunity in appealing to all of you to extend your co-operation and help in the Government's task of Harijan uplift and to make this State which is in so many other ways a pioneer in undertaking progressive measures, an example to the entire country in respect of Harijan uplift work. I need hardly remind you that the civilization and progress of a nation is measured by the standard of life of its poorest people, just as the strength of a chain is judged by its weakest link.

Jai Hind !

(Adapted from a Telugu talk broadcast from A.I.R., Madras)

Silage Scheme Extended

The Government have sanctioned the continuance during the year 1952–53 of the scheme for the preparation of silage at the Agricultural Research Stations, Wynaad and Taliparamba.

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A Road to New India

"Quit India" was the ultimatum Mahatma Gandhi issued to the British rulers, for they stood in the way of Ram Raj. This was not too long ago. But what is Ram Raj ?

By Ram Raj Bapu meant the glorious days of old when every one had plenty to eat and plenty to wear ; when the individual lived for the family, the family for the village, the villager for the district, the district for the province, the province for the country. Ram Raj was to him an article of faith, not a figure of speech. Rama was the monarch of the people. Rama administered justice regardless of caste or creed. He administered to the needs of life equally and and equitably, through the servants of the State.

Today

Today where do we stand ?

The eight millions of refugees have been more or less absorbed, most of them housed, large numbers of them provided with the means of livelihood. Much yet remains to be done. It was a hard task. Centuries could not be replaced overnight.

Meantime giant factories have already sprung up and many more are in the making—the Chittaranjan Locomotives, the Sindri Fertilizers, the Bangalore Machine Tools, the Hindustan Aircraft, the ship-building yards, the automobile factories, the engineering schools and colleges, the institutes of higher technology, the big laboratories of science. Yet more and more are coming in. More are yet to come to serve the increasing needs of the people.

The giant multi-purpose projects are forging ahead, projects which will bring more water for irrigation, more electricity to supply power to factory and light to town and village. Tractors and bulldozers are blasting the jungle, reclaiming vast tracts of virgin land. New towns and villages are springing up for the increasing population. But the plenty we looked for is yet far off. We still need to import cereals in order to meet the demand for two square meals a day. We need steel to run our industries.

As a nation we are hungry, we are diseased, we are ignorant. A hungry, diseased and ignorant man is least suited for freedom, much less suited for the *inquilab* of the spirit. For freedom to be a reality, hunger must be quenched, disease must be eradicated, ignorance must be liquidated and replaced by enlightenment. Whither is the way ?

And Tomorrow . . .

Tomorrow can then bring us again a day of harvest songs in the open field ; the frolicking children around the family hearth in the evening, the folk songs, the folk dances and the village opera on moon-lit nights. Instead of looking with envious eyes to other lands we can look forward again to guests from abroad whom we can regale with our customary abundance, we can write new philosophy, new epics and new folk-lore.

Our cattle can again be members of our household. They will plough deep, as they wag their tails, as they race furrowing across the soil. Our children can again be our partners on the job instead of being treated for rickets.

Our hearths can again be rich and warm and inviting as they were once. Our doors can again be flung open, for when there is plenty for all, why be afraid, and of whom ?

Community Project

The Five-Year Plan of the Government visualises movement in all directions—multi-purpose schemes for water and electricity, flood and malaria control, factories to produce tools and the means of production, and to produce consumer goods in ever-increasing quantities, transport and communications to facilitate exchange of commodities, exchange of ideas between regions ; the Community Project —a project of the people, by the people, for the people. What is the Community Project and what is its purpose ?

According to the latest census the rural population of India constitutes 82·5 per cent of the total, the remaining being urban. Democracy is based on the major number. India has been pledged to be a democratic republic. Numbers therefore count. The rural population, accordingly, should receive the prior and major attention of Government.

If the villager is to be made community-minded, he has to have ample food, ample health, ample clothing and ample shelter. He needs besides, ample recreation through which he can reinvigorate himself for the day's work, as also for the life in the community. All this can be achieved, if the villager produces enough with which he can feed himself amply and then have a surplus, enough to pay for the other amenities which he requires for the rest of his needs.

The Community Project, as conceived by the Government of India, has been designed to promote the pre-requisite for additional productivity, such as can cater to all the basic elements of rural life.

Initiative from the Villagers

A substantial part of the development necessarily falls on the shoulders of the villagers themselves. If the programme is to go through, villagers have to take the initiative in deciding what the need is most and in what order. They will have to gird their loins and get down to the ground with the axe and the shovel and start the multi-purpose development on their own—individually, collectively or in groups. The Government agencies will be there acting as complements to them in every phase of their activity and at every stage of the programme.

The Community Projects Scheme, at the present stage of the country's economy, has been made possible by the Indo-U.S. Technical Co-operation Agreement. Under this agreement, the equivalent of 55 projects has been launched throughout the States in India. The scheme covers about 16,500 villages and a population of approximately 12 million. The U.S. Government with their extensive experience in this direction, especially in the agricultural field, have come forward to help us. They have placed at our service monetary, material and technical resources to reinforce our own for the implementation of the scheme.

The present projects are to be implemented within a period of three years. The additional amenities created in the project areas are expected to be maintained with the additional resources resulting from an assured increase in the income of the people.

Demand on the People

Fifty-five projects for India are a tiny speck on the vast expanse of this land, covering hardly one-thirtieth of the population. And yet the scheme costs nearly Rs. 40 crores. The standard of basic amenities, modest as they are, demand at least Rs. 80 crores in addition. Even then it may not be enough. A reproduction of this scheme thirty times this size will cost thirty times this sum. Where is the money to come from ?

Land in India today produces about one-third of what the land produces in other countries. Yet our land is not less fertile, nor are our people less virile or less intelligent. If we are to provide the wherewithal for the rebuilding of New India, we must produce more from the soil. This can be done if the farmers in the project areas take full advantage of the agricultural measures visualised in the Community Project.

People can Work Harder

The people can work harder if they are in good health. This they can do if they act up to the preventive measures adopted by the health agencies in the project area. It is joy that produces. To have that exuberance of the spirit, it is necessary for the people to raise their stature by taking advantage of the adult education and recreation measures visualised in the project.

A farmer in India has approximately six months of spare time in the year. The landless labour has approximately eight months in the year running idle. If even a quarter of this idle time is used for building roads and schools, and in improving village drainage, creating open parks and playfields and grazing grounds, digging compost pits and attending to the thousand other necessities of life, the limited Government finances provided for the project area can be multiplied manifold.

Villager is the Ultimate Master

For us, the Community Projects programme is both an economic measure and an expression of the new democracy. We now spend Rs. 300 crores each year in foreign exchange to buy the food we need. This is more than seven times the cost of the 55 Community Projects now being created. Every maund of wheat or rice produced through community development will help reduce the enormous drain on the country's financial resources.

Herein lies the reason for the high priority of " Grow More Food " in the Five-Year Plan. Food is basic. In a country as large as India, economic stability must rest on sound agriculture. This, incidentally, is equally true of other countries including the United States of America, whose highly developed agriculture guarantees both food and raw materials and a market for industrial products.

In the ultimate analysis, it is the villager himself who can guarantee the success of community development. Once he is aware of his opportunities, the final pattern of his life will be determined only by himself—by the spare time, the surplus earnings and the active interest he can devote to his own betterment. This has been proved in many countries of the world. It has been already proved in the pilot projects in India.

Broad Features of Objectives

The broad features aimed at in the community project area as a final target are as follows :—

(1) *A Village Unit.*—A village on the average will consist of an approximate population of 500 distributed in about 100 families. A balanced distribution of the population to be used as a reference is given in Appendix I. The village should have the following amenities :—

(i) Two surface wells or tube-wells or tanks for drinking water.

(ii) Adequate facilities for drainage.

(iii) Agricultural extension service at the rate of one agricultural extension worker for every five villages.

(iv) Veterinary services through a veterinary hospital at the headquarters of the project area and through peripatetic agencies.

(v) Sanitary services through a sanitary inspector maintained at the block centres.

(vi) At least half of the agricultural land if possible should be served with irrigation through irrigation canals, tube-wells, surface wells, tanks and lift irrigation from rivers, lake, etc.

(vii) One-third of the area of the village should be kept reserved for the village housing, grazing fields and fuel forests freshly planted, if not already existing. Culturable waste land will be reclaimed.

(viii) The road system on the country side will be so developed as to link every village within the project area up to a maximum distance of half a mile from the village, the latter distance being connected by feeder roads through voluntary labour of the village population, only the main roads being provided for and maintained by the State or other public agencies.

(ix) Schools for primary education for all school-going children.

(x) Primary adult education and recreation centre in the open air or in the village school conducted by the village level worker with the assistance of the teachers of the school.

(xi) Centres for fisheries (where facilities exist).

(2) *A Mandi Unit.*—Villages should be linked up with a common market and a centre of other activities. Such units for the purpose of this project can be called the Mandi Units and unless already there, can be located as a nucleus of 15 to 25 villages depending on population. The Mandi Unit should include :

(i) A middle or secondary school.

(ii) A small dispensary connected with the primary health centre through mobile services health unit and having a Lady Health Visitor, midwives and Sanitary Inspector.

(iii) An agricultural extension service sub-headquarters.

(iv) A post and telegraph office.

(v) A transport service centre.

(vi) A marketing centre.

(vii) An arts, crafts and cottage industry centre.

(viii) A marketing centre and storage godowns for agricultural produce.

(ix) A shopping centre.

(x) A community recreation centre.

Co-ops and Pumpsets

In Coimbatore District, the irrigation wells got dried up in several areas as a result of continued drought. The existing wells therefore require deepening and water has to be pumped from huge depths. The orthodox system of baling-out water with a pair of bullocks involves much labour, money and time and the ryots have therefore realised the need for the improved system of irrigation through electric pumpsets. These pumpsets bale out water through electrical energy from a depth of 70 to 80 feet and the electrical charges are less than the cooly charges of the servant and the maintenance charges of the bulls that are necessary to draw water.

The Coimbatore Central Bank has been encouraging the ryot members of multipurpose co-operative societies to purchase and instal pumpsets by advancing loans. It has so far sanctioned five-year loans amounting to Rs. 52,100 to nine co-operative societies. These societies in their turn utilised the funds for financing the members for purchase and installation of pumpsets. So far 29 pumpsets have been purchased by the members of co-operative societies in Coimbatore District and 23 pumpsets are actually engaged in irrigation work. An extent of 229 acres was cultivated by the use of the pumpsets and 41 members of the societies were benefited.

The following instance will give an idea as to how far this system of irrigation has been beneficial to the ryots resulting in additional yield. Sri P. Muthukumaraswamy Gownder, a member of the Semmipalayam Co-operative Society in Palladam Taluk, who was the recipient of the loans issued by the Co-operative Society for the purchase of the pumpsets, utilised it for irrigating 24 acres of his land. Before the installation of the pumpset he could bring under cultivation only 18 acres of land, leaving fallow the remaining six acres ; the yield then was about seven tons of cereals, three tons of cotton and three tons of tobacco fetching an income of Rs. 5,500. As a result of the installation of the pumpset, he could bring under cultivation the entire extent of 24 acres and as a result of the assured water supply the member expects to get an yield of twelve tons of cereals, six tons of cotton and about seven tons of tobacco. If the present prices continue the total income of the member is expected to be nearly doubled.

PUMPSETS are cheaper and more efficient than bullocks for baling out water from deep wells. In Coimbatore District Co-operative societies finance the purchase and installation of pumpsets as seen in the picture, for the use of members.

ELECTRIC Lamp-post and wire pole form suitable background for this pumpset installed in a Coimbatore farm.

Grants for Relief Works

The Government sanctioned grants amounting to Rs. 11,59,750 as shown below to district boards for executing road works to relieve unemployment among agricultural labourers affected by adverse seasonal conditions :—

		RS.
1.	Nellore District Board	1,19,000
2.	Coimbatore District Board	73,250
3.	Salem District Board	2,00,000
4.	Madurai District Board	50,000
5.	Chittoor District Board	1,79,500
6.	Anantapur District Board	5,00,000
7.	Cuddapah District Board	38,000
	Total ..	11,59,750

CLOSE-UP of water pumped through electrical energy. So far 29 pumpsets have been purchased by co-operatives in Coimbatore District.

The Pinayur River Pumping Scheme

The Government of Madras have recently decided that river pumping schemes should hereafter be worked only through co-operative societies specially formed for this purpose and that new schemes will be started only if the Registrar of Co-operative Societies is able to form co-operative socities to run them. Ten schemes have already been sanctioned by Government in the districts of Chingleput, Chittoor, Ramanathapuram, Malabar and South Kanara.

In the Chingleput District pumpsets were installed at Pinayur and Nelvoy. The Pinayur village was recently visited by the Registrar of Co-operative Societies. He was accompanied by the Joint Registrar (Resettlement) and local co-operative and agricultural officers, Sri Ramakrishna Iyer, M.L.A., and Sri Srinivasa Iyer, a leading pattadar. Three 14 H.P. oil engine pumpsets have been installed on the banks of the River Palar to lift water from a "spring tank" in the river and take it to wet lands in the village through a leading channel about a mile and a quarter in length. Two out of three pumpsets work regularly and the third is a stand-by unit. All the pumpsets are being maintained by the Agricultural Department with its technical and supervisory staff. The cost of maintenance is now partly subsidised by Government.

In addition to the three pumpsets, two smaller pumpsets have been installed on private lands on hire basis. The question of forming a lift irrigation co-operative society to take over all the five departmental pumpsets is now under consideration. The proposal is to start a co-operative society which will work the schemes and relieve Government of its obligation to maintain and run the pumpsets on a subsidised basis. The cost of the pumpsets will be treated as Government loan, repayable in five to ten years. The society will maintain its own technical and supervisory staff and recover the cost of distribution of water to members' lands after each harvest. A meeting was convened at Pinayur, when the Registrar explained to the ryots the details of the scheme. The possibilities of organising co-operative societies in Pinayur and other places where river pumping schemes have already been sanctioned by Government, are being investigated by the Co-operative Department.

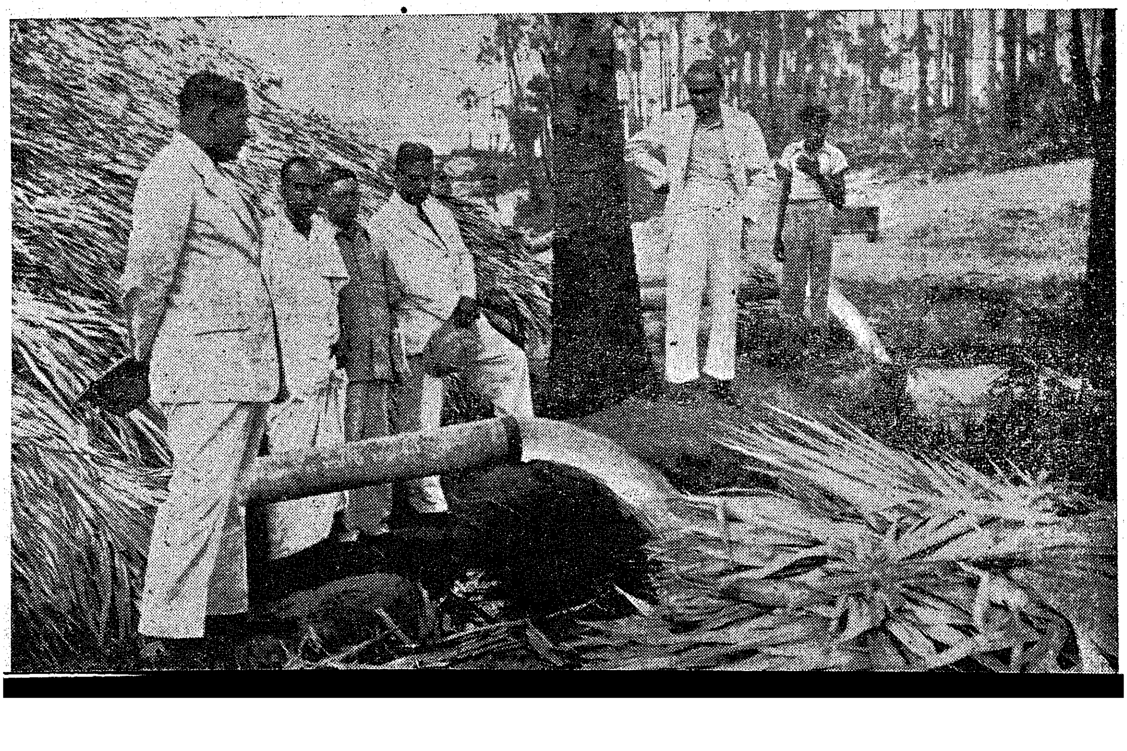
Indian Deodar for Pencils

A systematic investigation on pencil woods, carried out at the Forest Research Institute, Dehra Dun, has shown that not only is Indian deodar suitable for first-class pencils, but is also superior to the East African cedar, on which the Indian pencil industry largely depends at present.

The result of the investigations as well as the method of treatment of deodar are given in the Indian Forest Bulletin No. 149 recently issued by the Forest Research Institute, Dehra Dun.

There are very few timbers which can be satisfactorily used for pencil-making. In Eastern Red cedars, America has got the best pencil wood in the world. The supply of this wood is almost exhausted. Incense cedar of California is another timber used for the purposes; but this timber is stained and processed to give it a red cedar colour and improved softness.

PINAYUR RIVER PUMPING SCHEME : River pumping schemes will hereafter be worked only through Co-operative societies. In Pinayur village (Chingleput District) three 14 H.P. oil engine pumpsets have been installed on the banks of the River Palar.



Multipurpose Co-operatives

ANNIYUR

The Anniyur Multipurpose Co-operative Society, Anniyur Post, Villupuram Taluk, South Arcot District, was registered on 12th December 1919 and started on its work on 7th January 1920. The Society is affiliated to the Villupuram Co-operative Supervising Union and the South Arcot Co-operative Central Bank Limited, Cuddalore.

There are 271 members on its rolls with a paid-up share capital of Rs. 3,809. The maximum credit limit of the Society is Rs. 40,000 and the individual maximum borrowing limit is Rs. 1,000.

The Society borrowed Rs. 31,679 from the Central Bank during the period from 1st July 1951 up till now and there are no overdues under Central Bank loans on date. To carry on its non-credit activities the Society obtained a cash credit of Rs. 1,000 from the Central Bank. A sum of Rs. 24,713 is outstanding against members. The following are the investments made by the Society :—

		RS.
1	Shares in the South Arcot Co-operative Central Bank Limited, Cuddalore.	1,579
2	Share in the South Arcot District Co-operative Central Stores Limited, Cuddalore	25
3	Shares in the Villupuram Sale Society..	25
4	Reserve Fund invested in the South Arcot Co-operative Central Bank Limited.	314

The Society has taken up multipurpose activities. This Society is selected for the distribution of iron and steel, chemical manures, etc. During the year 1950–51. the Society distributed ammonium sulphate to the value of Rs. 1,908 and iron implements worth Rs. 235.

The Society has done much to inculcate the habit of thrift among its members. The savings effected by members through hundi boxes amounted to Rs. 94–8–6.

The Society employs one clerk and one peon. The panchayatdars are enthusiastic and take keen interest in the working of the Society.

MUDDANAGERI

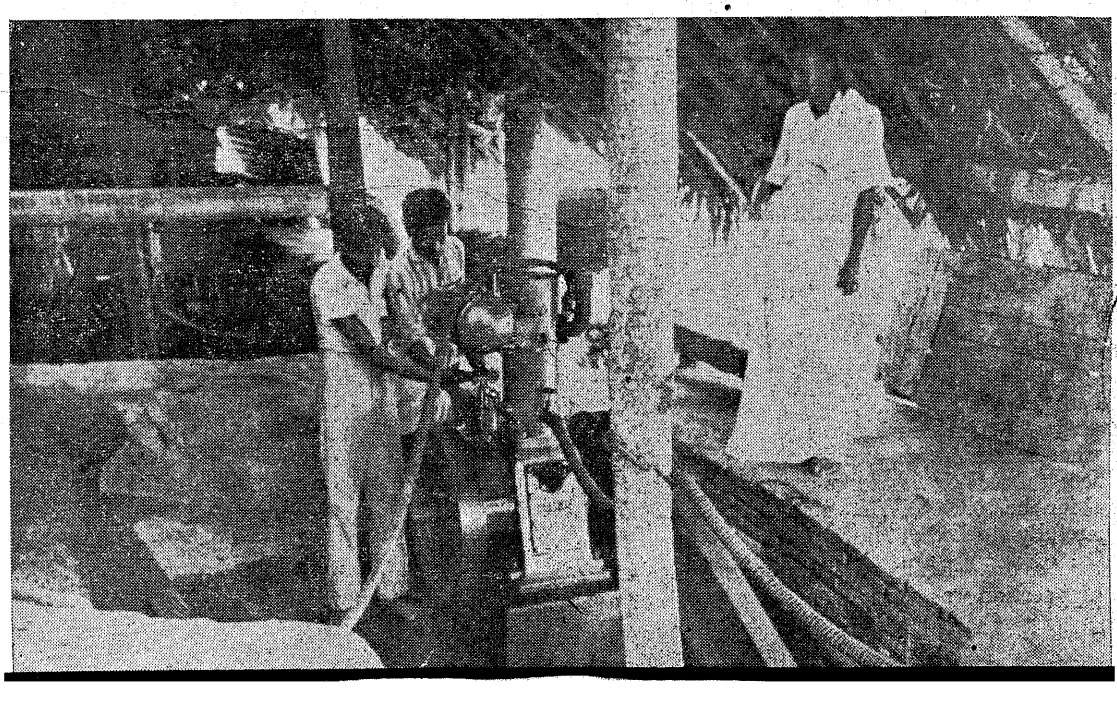
The Muddanageri Multipurpose Co-operative Society, Alur Taluk, Bellary District, is six miles away from Alur, the headquarters of Alur select firka and Alur Taluk in Bellary District. It was re-registered on 26th March 1949 and started on its work on 28th March 1949. It has now 78 members with a paid-up share capital of Rs. 2,253. There are 25 Harijans as members of this Society. The village has a population of 780 persons and the Society has served 390 persons. This works out at 50 per cent of the population as against a target of 30 per cent.

The maximum credit limit of the Society is Rs. 5,000 and individual maximum borrowing power is Rs. 250. The loans due to the Hospet Co-operative Central Bank is Rs. 3,500 and 19 loans due from members amount to Rs. 3,500. It has invested its Reserve Fund of Rs. 455 in the Hospet Co-operative Central Bank out of the total Reserve of Rs. 557–6–0.

It deals in controlled articles like rice, wheat, cloth, sugar, cart-tyres and iron implements.

It has provision in the by-laws for social and recreational activities, and it is one of the good working societies in the select firkas. An amount of Rs. 500 has been recommended as subsidy for 1952–53 to purchase a radio set for the recreation of the villagers.

THE PUMPSET : Inside the shed in which the oil pumps are erected. All the pumpsets are being maintained by the Agricultural Department.



Electricity: Review for June 1952

Review of electricity work done during June 1952 is given below:

Machkund Hydro-Electric Scheme.—Lands taken over by Orissa Land Acquisition Officer from the parties after payment of final compensation were yet to be handed over to this Department. The departmental road from Lamptaput to Machkund was completed. About 75 per cent of the eight-mile road from Sogurue to Jalaput was metalled; the work on bridges and causeways was progressing. The construction of permanent camp buildings at Onakodelli was nearing completion. Work on temporary buildings at Jalaput was in full swing and that at Chickempet camp was already over.

Excavation at Jalaput dam was in progress. Bore-holes were being drilled at the downstream side to find out the rock level for founding the dam. About 47·4 per cent of excavation and 39 per cent of masonry were completed at the diversion dam. About 65·7 per cent of excavation and lining of the flume channel was over and further work including masonry at the piers of the Burdyal acqueduct was progressing. The flume tunnel was driven through and about 60·7 per cent of lining was completed. At the tunnel pond dam about 96·4 per cent of excavation, 16·6 per cent of masonry and 1·3 per cent of concreting for buckets and apron were completed.

Pressure tunnel has been driven through and sides and top concreted. Final invert concreting for pressure tunnel and providing reinforcement for pipe tunnel lining were in progress. Grading valve house, penstock slopes and laying haulage track were in full swing. Levelling powerhouse site was completed. Excavation for powerhouse, levelling transformer yard and excavation for tail race were in good progress. Penstock pipes and heavy machine parts were being received at Visakhapatnam and transported to project site. Labour force during the month was 4,108.

Moyar Hydro-Electric Scheme.—All the civil works from head works to powerhouse have been completed and the first 12,000 KW limit was commissioned in April 1952. Erection work on the 2nd and 3rd units and the balance of works in switchgear erection were progressing. The II penstock line is expected to be ready for service by the middle of July 1952. Work on the III line in the lower reaches was continued and about 85 per cent work having been completed so far.

Pykara III Stage Extensions.—At the Pykara Dam construction of masonry for wing wall and main dam structure and concreting for R.C.C. Borewall were continued. The new (IV) penstock line was completed and filled with water. Concreting of differential surge tank was in advanced stage of progress. Erection of steel structures for the Singara Powerhouse Extensions remains to be done.

Madurai Thermal Scheme.—Collection of materials, earth work excavation and flooring concrete for covering water pond were in progress. Providing reinforcement for turboset pedestal and concreting were under progress. Boiler material for the 10,000 KW set were being received, verified and carefully stacked at site.

South Kanara Scheme.—Realignment in certain reaches in Hiradka-Udipi section was continued.

Tungabhadra Hydro-Electric Scheme.—Soil samples obtained for hearting of the forebay bund were being tested for suitability. Detailed survey for camp and roads nearing completion. Terminal connection at dam powerhouse was being investigated in connection with the existing line and the alignment of the high level canal of the Public Works Department.

The profiles and pole schedules for Gooty-Anantapur and Cuddapah-Kodur lines were completed by the field.

Madras Plant Extensions.—The construction work of B station at Basin Bridge was in progress. There was not much progress in the building steel work due to non-receipt of fabricated materials. All roof slabs have been concreted for main power station superstructure. Firing floor turbine operating floor and all the ventilators in the boiler house roof were concreted. Drilling operations for the borewell near the Electrical stores were continued. Erection of steel work for turbo-alternator block No. 1 for the 2nd stage extensions was commenced. Works on erection of boilers 2 and 3 and turbo-alternator set was continued. Work on mechanical coal handling plant, chimney, switchgear, etc., was progressing.

Vijayawada—Vizag. Powerhouse Extensions—(i) *Vijayawada*—Work on second raw water well was progressing. Other civil works were also continued.

(ii) *Vizag.*—Work on west and south side extensions was continued.

Nellore Thermal Scheme.—Staff quarters at Gudur Sub-station was progressing. Sewage and drainage work on dispersion trench was completed. Manufacture of doors and windows for pump room was in progress.

Operation Branch

Hydro Areas.—The water conditions in Hydro areas improved during the last week of the month. As a result of this, the 50 per cent cut in consumption was reduced to 25 per cent with effect from 18th June 1952 and was completely lifted from 1st July 1952.

The Hydro systems continued to run in parallel with the Madras Electricity System. The number of units generated, peak load and the services connected during the month in the three hydro systems were as follows:—

Name of System.	System peak load in K.W.	Generation in millions of units.	Services connected. Agricultural.	Industrial.	Domestic.
Pykara	36,500	14·4 / 5·1 *	52	..	426
Mettur	35,800	4·7	36	..	93
Papanasam ..	18,900	13·7 / 1·8 †	54	..	247

* 5·1 million units were generated at Moyar Powerhouse.

† 1·8 million units were generated at Madurai Thermal Station.

The Moyar Powerhouse with a peak load of 12,500 KW and Madurai Thermal Station with a peak load of 3,300 KW were giving relief to the three hydro systems.

Shri Sri Prakasa, Governor of Madras, visited the Mettur Powerhouse on 28th June 1952 and the Pykara Powerhouse on 17th June 1952.

Thermal Areas and Ceded Districts.—During the month the Madras Electricity System continued to give relief to hydro systems except during peak load hours in the evening. The first boiler of B station which was commissioned in May 1952 was supplying steam to the steam gauge of A station. Consequently the generation at A station above reached a figure of 25,600 KW (against 22,000 KW of the A station so far).

The peak load, generation and the number of services connected up during the month in the several areas were as follows :—

Name of System.	Peak load in K.W.	Units generated in millions.	Service connected. Agricultural.	Industrial.	Domestic.
1 Madras	28,500	14.99	13	24	216
2 Vijayawada—					
Steam	8,420	3.65 }	26	3	111
Diesel	....	.... }			
3 Visakhapatnam—					
Steam	3,540	1.36 }	..	2	50
Diesel	1,100	0.13 }			
4 Kakinada ..	800	0.02	2	21	44
5 Rajahmundry ..	550	0.04	..	..	..
6 Narasaraopet *					
7 Srikakulam ..	100	0.02	..	1	16
8 Ongole	88	0.02	..	..	11
9 Narasannapeta	15	0.003	..	..	..
10 Nellore	900	0.270	1	1	28
11 Proddatur ..	102	0.024	..	..	19
12 Kurnool ..	310	0.098	..	2	34
13 Anantapur ..	155	0.045	..	1	17
14 Cuddapah ..	215	0.642	..	1	11
15 Nandyal ..	130	0.022	..	2	23
16 Tadpatri ..	65	0.011	..	..	25
Power Purchased from Mysore :					
Hindupur ..	220	0.068	..	2	9
Ceded Districts ..	2,832	1.164	6	11	97

* Station shut down as power supply has been made available from the Vijayavada System.

In the Madras Electricity System 77 Nos. D.C. services with an approximate connected load of 93.73 KW were changed over to A.C. supply on a voluntary basis.

In Visakhapatnam area 80 per cent of work on the Grabham–Bobbili 11/33 K.V. line was completed. In Rajahmundry–Kakinada area, work on extension of supply to Vishrantipuram Sanatorium was completed. In West Godavari area, the Bhimadole–Madinarapalum–Munduru 11 K.V. line has been energised giving supply to en route distributions. In Vijayawada area, the Guntur-Narasaraopet 11/33 K.V. line was energised on 30th June 1952 and supply to Narasaraopet distribution was given from Vijayawada Powerhouse enabling the Narasaraopet diesel station to be shut down from 1st July 1952.

Warning Against Incompetent Technical Institutions

An instance has recently come to the notice of Government where a private organization started a technical institute in this State offering training in Diploma courses such as L.M.E., L.E.E., etc., against the advice of and without the approval of the Department of Industries and Commerce, Madras, and was forced to close it down after the students had put in one year study when it was discovered that the Institute was not competent to run the Diploma courses. In order to prevent a repetition of cases of this kind with consequent suffering for students, Government wish to warn all concerned that any technical institution in this State which starts working precipitately without previous affiliation will run the risk of being disqualified for purposes of affiliation and grant.

Registration of Cottage Industries for Government Purchase

The following procedure has been suggested for registration of cottage industries firms :—

(*a*) The cottage and small scale industry units desiring registration as approved contrators with the Directorate-General of Supplies and Disposals, should apply for this purpose on the prescribed form obtainable from Section C. S. 4 Office of the Directorate-General of Supplies and Disposals, Shahjehan Road, New Delhi, on payment of Rs. 5 and such requests should be routed through the State Director of Industries concerned.

(*b*) The State Director of Industries on receipt of applications for registration shall examine the same to ensure that the particular unit which has applied for registration is capable of manufacturing the various stores according to the specifications for the stores laid down by the Government of India. He shall also certify to the effect that the particular unit is equipped with the necessary plant and equipment for the manufacture of the stores, that the productive capacity i.e., the monthly or annual rate of production is sufficient and that the unit is financially sound.

(*c*) The State Director of Industries shall recommend the application only in those cases where in addition to the manufacturing capacity he is also fully satisfied about the financial soundness of the unit applying for registration on the approved contractors' list of the Directorate-General of Supplies and Disposals after the State Director of Industries has satisfied himself about the financial stability of the unit.

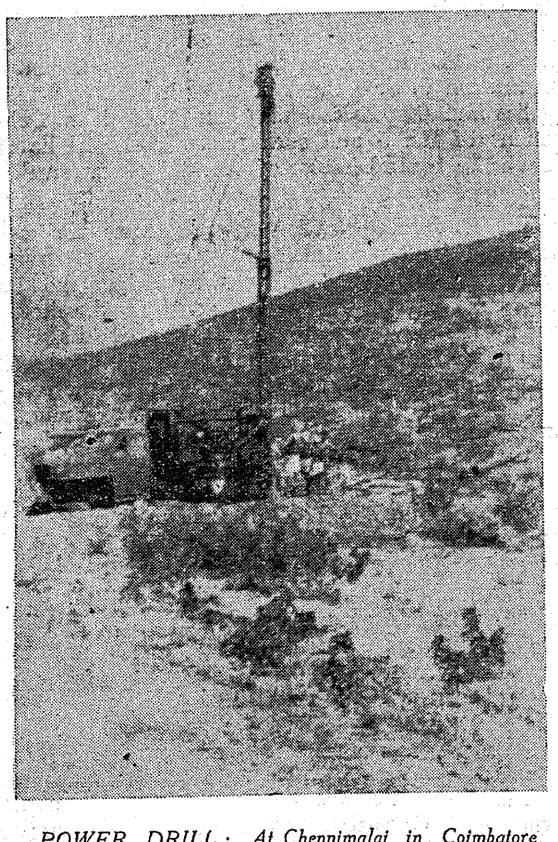
(*d*) The cottage and small scale industry unit should produce Income-Tax clearance certificate duly certified by the Income-Tax Officer of the area concerned.

During the month thirty-one extensions were sanctioned by the Chief Operation Engineer (South) and Chief Engineer for Electricity at an estimated total cost of Rs. 15,04,430.

Contour Bunding in Chittoor District

Among the various famine relief works in progress in Chittoor District contour bunding the sloping dry lands had also been taken up as an important relief work in Chittoor and Vayalpad Taluks of the district during June 1952 and is progressing rapidly.

The great majority of the famine-stricken is the ryot population and hence the important feature of the contour bunding work as a relief measure is that it provides work for the multitudes of the tillers of the soil and at the same time enables permanent improvement to their own lands by their own hands. Lands hitherto exposed to the vagaries of soil erosion lost not only a major portion of their productive top layer of the soil but also a major portion of the little rainfall received in the tract. Continued soil erosion if not checked in time washes off the previous soil and exposes the boulders and rocky strata underneath, rendering cultivation uneconomical if not impossible. Contour bunding, properly laid, will check these menaces and enable the lands to receive the little rainfall as a friend, resulting in due course, in increased productive capacity of the soil, increased yield, replenishment of underground springs, rise in level of water table and permanent improvement in the agricultural economy and ultimately the betterment of the lot of the ryots.



POWER DRILL : At Chennimalai in Coimbatore District a power-drill is used for boring a well for the Panchayat Board

CANAL WORK : At the Lower Sagileru Project, canal work is being done in Badvel Taluk, Cuddapah District

Numerous Labourers Employed

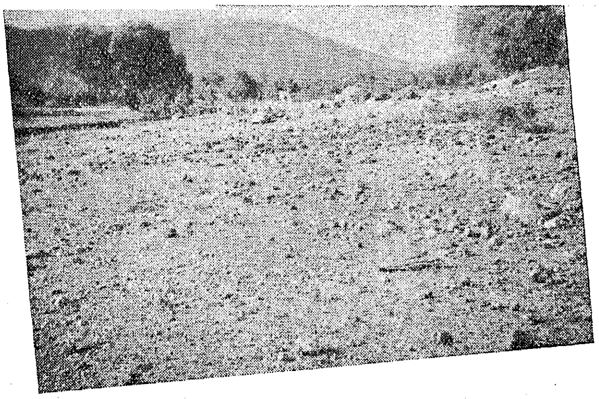
The experiences gained in the contour bunding work under execution in Chittoor District reveal that this work can be executed with ease by the agriculturists, as it involves only earthwork excavation and does not require, therefore, any technical skill in the matter. Numerous labourers are engaged in the work in groups, many of the groups constituting the entire families of the farmers. As would be seen from the illustrations in the photographs even women squads are able to work in separate groups and easily earn their living every day. The burrow pits provided for earthwork excavation are only six inches in depth and this enables extraction of light work from the labourers. It is noticed that even old men, women, girls and boys are able to take part in this bunding work and earn their living.

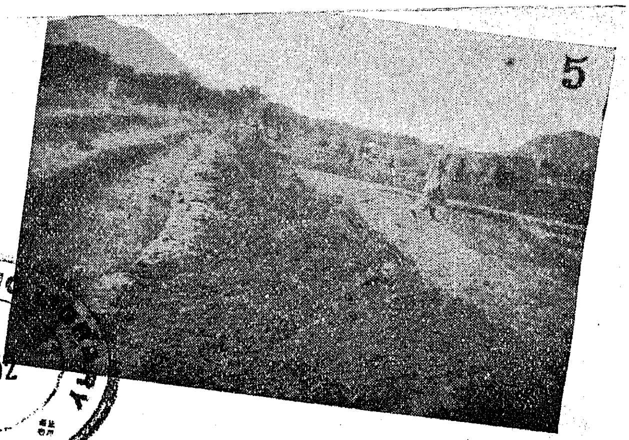
Contour bunding has to be necessarily taken up on catchment basis only and therefore, the work will be concentrated in a single catchment of a large area. A greater number of labourers can therefore be easily supervised by the minimum staff. As such relief can be afforded to a greater number of famine-stricken labourers at the minimum cost on the supervisory and other staff.

Contour bunding and other soil conservation measures are as such ideal for undertaking as a famine relief measure in the famine-stricken areas.

Nomination to Licensing Committee

The Government have nominated Sri J. M. Lobo Prabhu, I.C.S., Secretary to Government, Development Department, as the representative of the Madras Government, for co-option on the Licensing Committee, whenever the Committee, constituted under the Registration and Licensing of Industrial Undertakings Rules, considers applications from Madras State.





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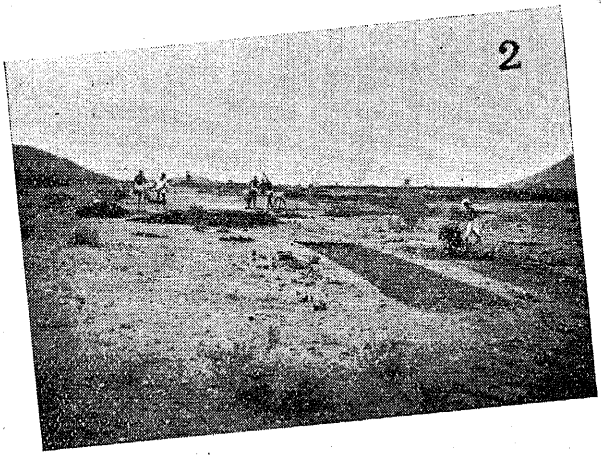

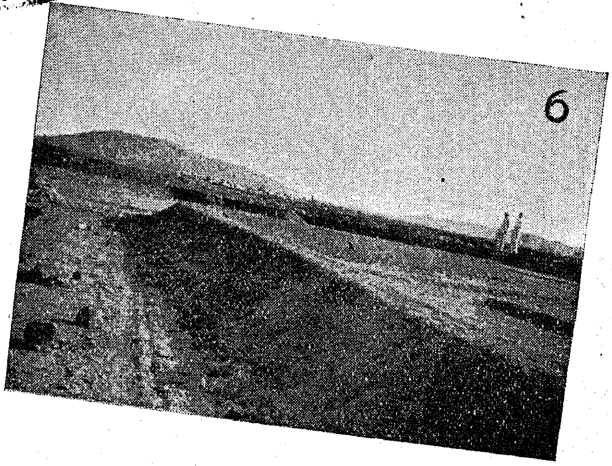

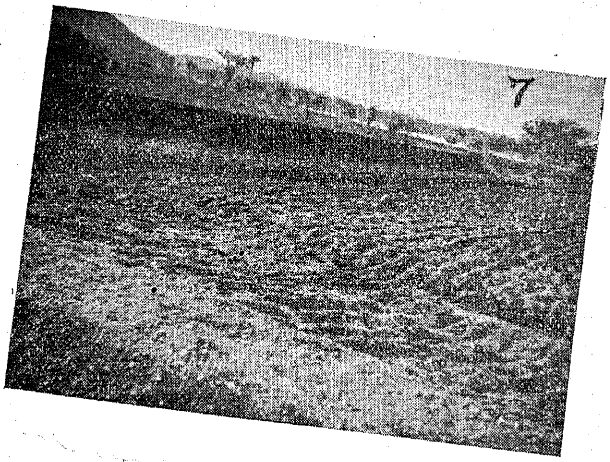

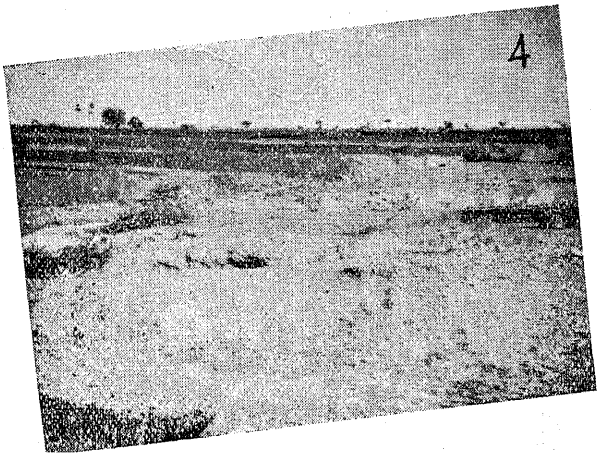

CONTOUR BUNDING IN CHITTOOR DISTRICT

The Government have sanctioned the execution of contour bunding works on over 6,500 acres in Chittoor and Vayalpad Taluks of Chittoor District as a 'Famine Relief Measure work'. Pictures show work in progress :

1. Continued soil erosion washes off the precious soil and exposes the boulders and rocky strata underneath. 2. Contour bunding provides work for all. 3. Men and women at work. 4. Gully plugging in bunded area. 5. Marginal bund on the road-side. 6. After completion. 7. After a slight rainfall the ryots take up ploughing in the bunded areas.

TANJORE ARTS AND CRAFTS

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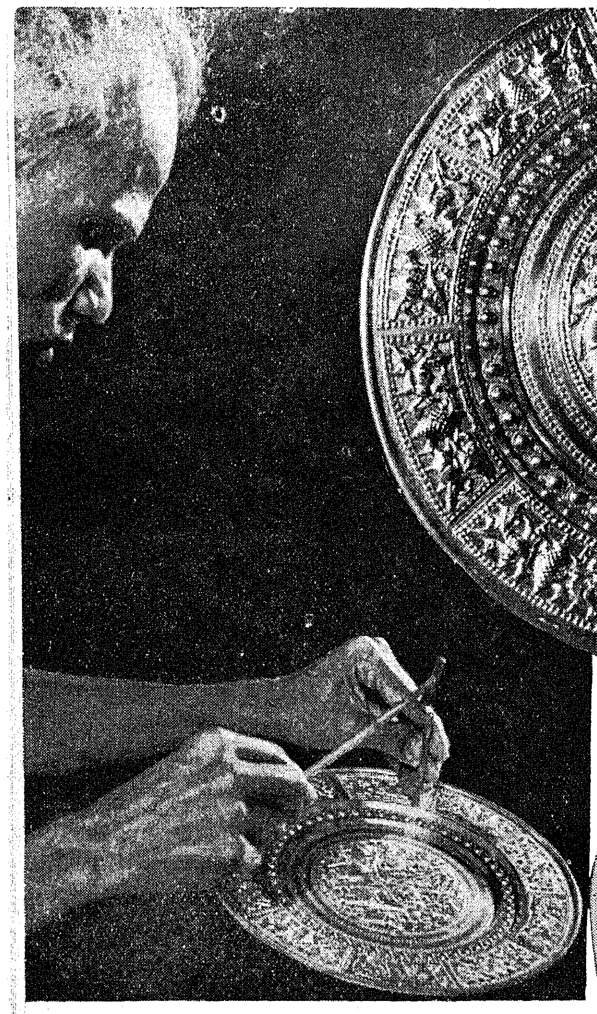
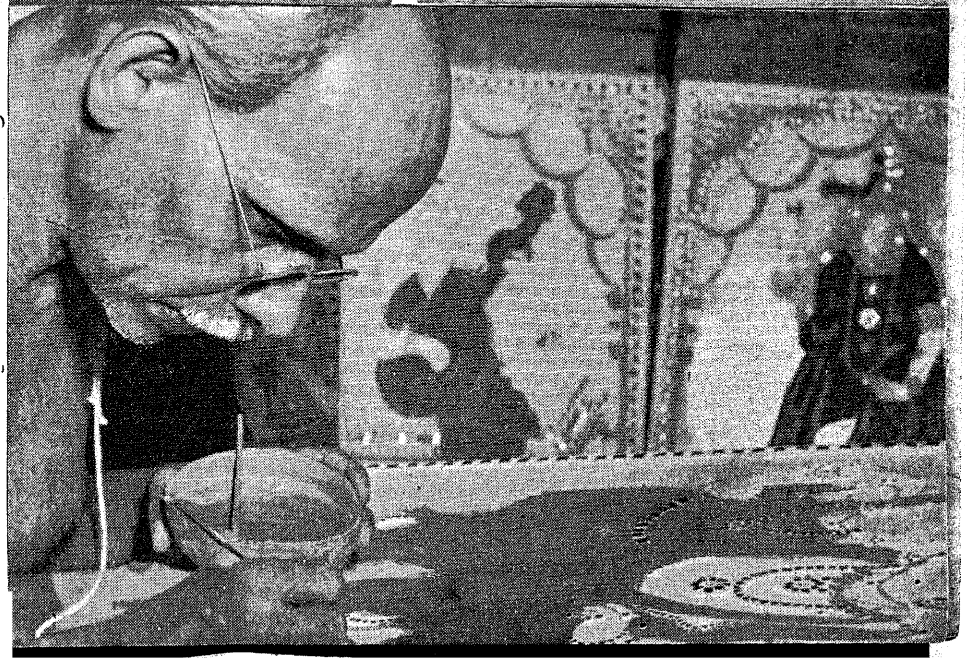


Tanjore has always been famous for its arts and crafts, and many of the products presented by the respective artisans who follow the profession with a traditional vocation, enjoy country-wide renown. From patterns evolved by time-honoured practice are created exquisite objet d'art which are at once collectors' items and connoisseurs' delight.

On the left is seen the making of the famous Tanjore plates—salvers of cunning blend of brass and silver, done in detailed mythological motifs. The silver centrepiece is separately worked, and then fused onto the brass outer. Pictures show the delicate hammering done by a master craftsman, the modest workshop where the plates are designed, and close-ups of two elaborately contrived plates, silver inlay of Nataraja and an ornamental vessel displaying the Dasavatar.

Equally famous are the Tanjore pictures, shown at right. On a specially prepared paper-mache board is traced the picture—Radha and Krishna here—in the unvarying style of the old school, and the figures filled in with repeated washes of gay colours. Then begins the process of gilding, when the jewels and laces are highlighted by spangles to obtain a gold-sequined effect. The picture is mounted in an ornate frame, and is now ready for sale.



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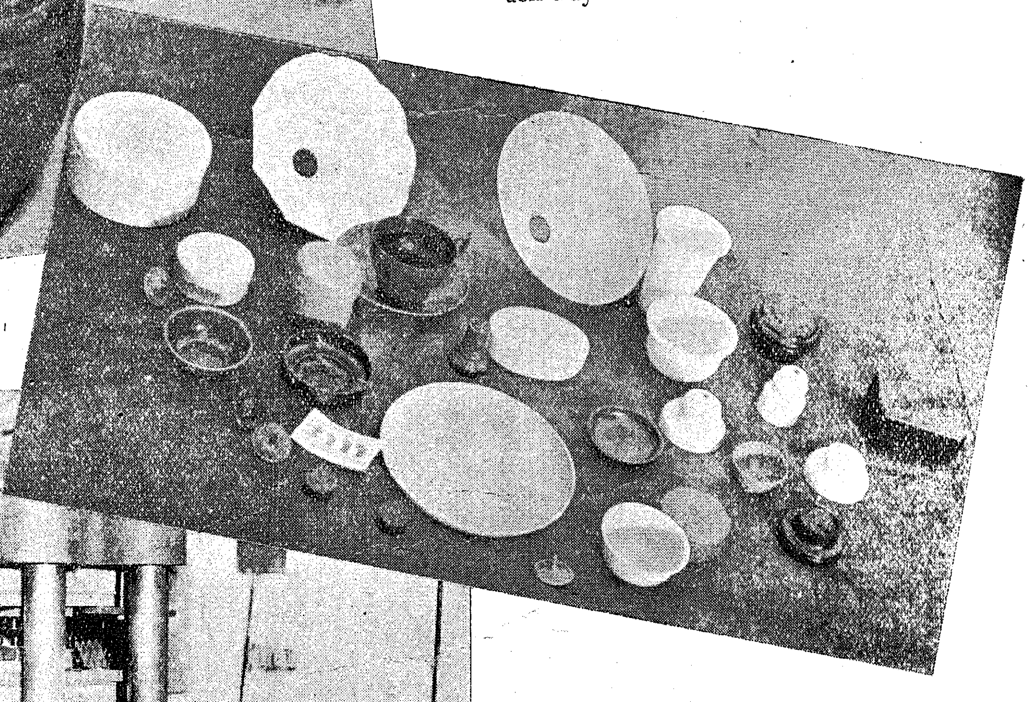
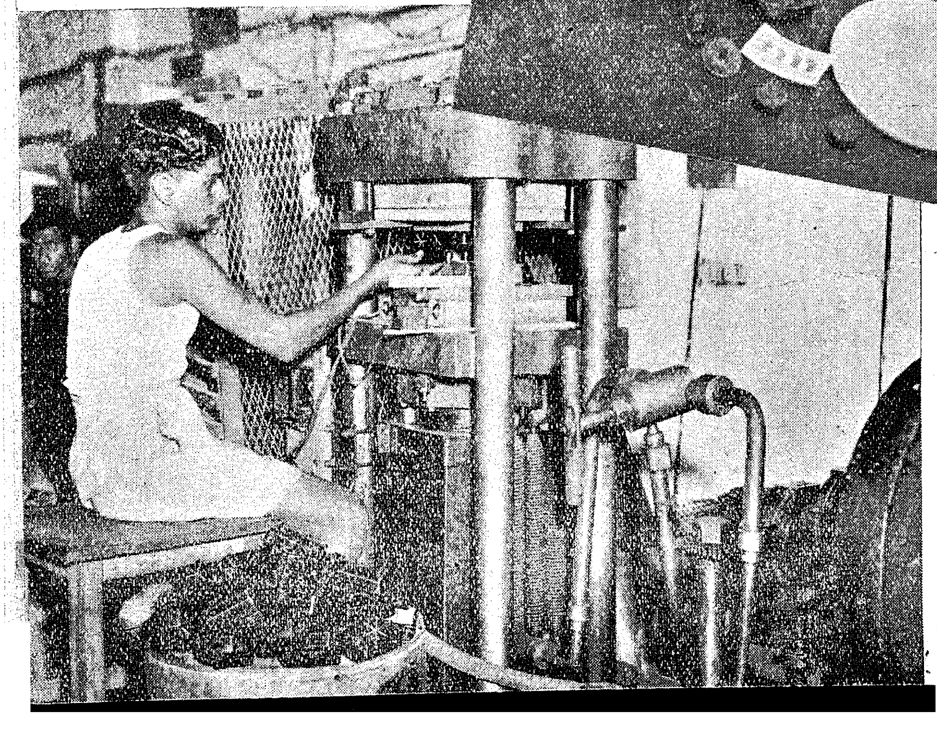
TANJORE INDUSTRIES

One of the leading industries of Tanjore is the manufacture of veenas. With meticulous regard for the rigid principles of veena-making laid down by the ancient guild, these hereditary craftsmen turn out with loving care hand-made instruments of jack, brass and ivory that satisfy the requirements of even the most exacting of musicians.

Tanjore has modern industries too, and one popular small-scale enterprise is the plastics plant. Here with modern machines are manufactured a variety of products—soap-boxes, electrical fittings, buttons, toys, cups and saucers, trays and ash-trays.





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The Newer Knowledge of Nutrition

By Sri A. B. SHETTY, Minister for Health

Great advance has been made in recent years in the science of nutrition. The discovery of the important part which vitamins, minerals and certain proteins play in improving the quality of a diet has opened a new chapter in our knowledge of nutrition. A balanced diet should contain all the essential ingredients—carbohydrates, fats, proteins, minerals, vitamins, water and cellulose—in proper proportions. Health, growth and efficiency are more closely dependent on adequate diet of the right kind than on any other factor. A world-wide interest in nutritional questions has been awakened by the experiences of the last two World Wars. With the growing knowledge of the requirements of human nutrition and the nutritive values of common foodstuffs, it has become possible to plan satisfactory diets for various income groups. The newer knowledge of nutrition "calls for a new kind of statesmanship" that will plan the production and distribution of such kinds and quantities of foods as are needed for better nutrition of all the people.

Recent studies have shown how millions of people in all parts of the world suffer from inadequate development or from various degrees of ill-health on account of the low-nutritive value of the food they consume. Malnutrition due to certain deficiencies in diet impairs physical as well as mental growth in children. It lowers vitality and reduces resistance to disease in the young and old. Further, it gives rise to certain specific diseases. It is held that, barring infectious diseases, nearly 75 per cent of human ailments may be traced to food deficiency. The newer knowledge of nutrition has ushered a new era for preventive medicine.

Towards the last quarter of the 19th century preventive medicine was chiefly a matter of improved sanitation and later of immunisation against communicable diseases. From the early part of this century the important part which proper nutrition plays in preventive sickness and promoting positive health is becoming increasingly evident. Recruits to the Army have been found to show definite improvement in their physical condition after a short period of good feeding. Marked changes have been noticed in the health and rate of growth of poor school children by providing them extra milk. Nutritional research has made a great contribution to preventive medicine by accumulating evidence to show that improper food is the underlying cause of many diseases.

Dangers of Malnutrition

Defective nutrition is found among large sections of the population even in well-to-do countries. In our poor country multitudes of people are malnourished, the level of physical efficiency is low and nutritional disorders of almost every kind are common. The diet surveys carried out by the health staff of our Nutrition Units show that protective foods like milk and milk products, meat, fish, eggs, etc., hardly find a sufficient place in the diet taken by even the higher socio-economic groups. Green leafy vegetables which are rich sources of Vitamins A and C and important minerals like calcium and iron are consumed only in small quantities even though they are very cheap and easily available. Fruits including the cheapest of them—plantains—are rarely eaten. Nutrition surveys among children have revealed that the majority of them are under weight and short of height and they suffer from varying degrees of deficiency diseases on account of under-nutrition and malnutrition.

The three Regional Nutrition Units have been doing some educative campaign among the villagers, exhorting them to incorporate in their daily diet cheap protective foods like green leafy vegetables, groundnuts, sprouted pulses, etc., and demonstrating to them correct methods of cooking rice and vegetables to prevent loss of nutrients. Skimmed milk given as a free gift by the UNICEF and multivitamin tablets have been distributed in various places among children and expectant and nursing mothers. A free cereal mid-day meal to make good calorie deficiency, a glass of reconstituted skimmed milk and multivitamin tablets have shown remarkable effects in increasing the height and weight of indigent school children and improving their health.

Mulnutrition is the root cause of human and animal diseases in this country. Ramifications of the science of nutrition extend also to food crops and to the soil. The richness of the soil aided by irrigation and manures determines the quality of the food crops, vegetables and fruits grown on it. Nutrition science has devised what is called the "enrichment programme" for artificially fortifying foods which are deficient in some nutrient. There is a proposal to combat malnutrition and beri beri in the Northern Circars by the supply of enriched and fortified rice with American aid.

Regional Diet Vagaries

The national diet of the Sikh, the Punjabi and the Pathan, consisting mainly of whole wheat and large quantities of milk and milk products, is the best in India. Madras and Bengal are the worst sufferers because the food consumed lack in essential nutrients. The main defects of the average South Indian diet are lack of animal proteins, fats, mineral salts and vitamins and an excessive proportion of carbohydrate. Animal proteins contain more of the essential amino-acids than do vegetable proteins and they are on the whole easier to assimilate. Milk, eggs, meat and fish have animal proteins which are of a higher biological value than the proteins and vegetables like pulses.

The large majority of people in Madras State subsist wholly on milled rice. The milling of rice lowers its nutritive value. Polished rice coming out of mills is favoured becasue it looks better, it cooks more easily and it has better keeping quality than unpolished rice. But the process of milling removes the outer layer of the grain which contains a good portion of its protein content as well as of mineral matter and vitamins. Parboiled rice even when milled is superior in nutritive value to milled raw rice. In the coastal Andhra districts people eat raw rice highly milled and many of them suffer as a result of it from beri beri which is a deficiency disease.

HAND-POUNDED RICE is more nourishing than mill rice

Value of Protective Foods

Nutrition experts lay special emphasis on the need for including in our diet sufficient proportions of milk and milk products, green vegetables, fresh fruits, meat, fish and eggs. These are known as "protective foods" because they contain valuable food factors like animal proteins, fats, vitamins and mineral salts which are essential for health and growth. Such protective foods form but a scanty portion of the diet consumed by the mass of the population. Protective foods are not available in sufficient quantity and they are also more costly. Poverty and ignorance are the two main causes of widespread malnutrition in underdeveloped countries. The elimination of poverty requires a long-term plan.

Much can be done to remove ignorance regarding the nutritive values of the foodstuffs commonly used. Wise selection of articles of foods which are within the means of poorer classes and proper methods of cooking will improve the diet. Steps should be taken to adjust food habits in accordance with the nutritional needs and the availability of foods in particular localities. Let the rice-eaters be encouraged to consume hand-pounded rice which is more nourishing than milled rice. Failing this, let them at least use parboiled under-milled rice. The nutritive value of the diet can be raised if the rice-eaters will include millets like ragi as a part of their daily food. Any combination of wheat or millets with rice is preferable to a mere rice diet.

Milk and Fats

Milk is the greatest nutritional need in South India, particularly for vegetarians. It is Nature's complete food as it contains essential nutrients in harmonious combination. Egg is also a very valuable protective food for the same reason. Sufficient consumption of milk is specially important for mothers and children. Women during pregnancy and lactation need more protein than at other times. Growing children also require sufficient protein in their diet to serve as building material for the body. Milk contains protein of high biological value and an abundance of calcium which also is necessary for both mothers and children. Those who cannot afford to get enough milk can have skimmed milk which is cheap and as rich in protein as whole milk. Half a pound of reconstituted skimmed milk made out of imported milk powder has a wonderful effect on ill-nourished children. It is the cheapest form of milk at present available.

Buttermilk also is as cheap and good as skimmed milk. Fat is of value to the body but the diets of the poorer classes are low in fat. Animal fats such as butter and ghee are more valuable as they contain Vitamin A, but since they are expensive the poor have to use vegetables, fats and oils. Oilseeds and nuts are rich in fats. Vitamins are found in all simple natural foods, such as whole cereal grains, milk and its products, fresh fruits and green vegetables. Lack of Vitamin A is a very common defect in our diet. Fish liver oil is rich in this vitamin. Shark and saw-fish liver oils which are manufactured in our State are now extensively used as substitutes for cod liver oil.

Vegetables and Fruits

Increase in the consumption of green leafy vegetables is an easy and cheap way of making food the deficiency of Vitamin A. The B group of vitamins is responsible for deficiency diseases like beri beri. Parboiled rice, whole wheat, millets, pulses and nuts, milk products, yeast, lean meat, liver and eggs will supply this group of vitamin in sufficient quantities. Fruits provide useful amounts of minerals and vitamins and add variety to the diet. Vitamin C is found in fresh fruits and green leafy vegetables. Nellikai is very rich in Vitamin C. When greengram or bengalgram is allowed to sprout or germinate, Vitamin C is formed in it, and the consumption of such germinated gram is recommended for this purpose. Vitamin D is found in milk and eggs and particularly in fish liver oils. Exposure of the body to the sunlight is a cheap way of obtaining this vitamin. Increased consumption of cheap fish like mackeral and sardines will secure protein of high biological value. The Fisheries Department is adopting various measures for the development of our marine and inland fisheries. Improvement in culinary practices is necessary for preventing nutritive losses on cooking. Repeated washing of rice before cooking and using large quantities of water for boiling rice and throwing away such water results in the loss of vitamins and minerals.

(Continued on page 30)

Leprosy Work in the Firkas

By Sri T. N. JAGADISAN, Honorary Leprosy Prevention and Relief Organiser

The Government of Madras have for long been specially interested in village leprosy work. Their concern in this work was fully expressed by Dr. T. S. S. Rajan, then Minister for Health, in his inaugural address to the Third All-India Leprosy Workers' Conference, Madras, on 3rd October 1950.

"Leprosy is very largely a rural disease. It is a chronic disease but not a killing one. It may deform a patient but it does not disable him altogether except in rare instances. It is a disease of protean manifestations, with this contradiction that sometimes the more obvious forms are less infective and some forms of infective leprosy, especially in the early stages, are difficult to detect. Our approach to the problem must be to take due note of all these peculiar traits. Our plans should be to reach at the villages and to build a network of curative and preventive measures in order to control leprosy in the population not only by dealing with the more obvious advanced infective cases but also by dealing with the inconspicuous and therefore peculiarly dangerous types of infective cases. The emphasis should be on village work. The approach should predominantly be a public health approach."

Intensive Rural Service at Minimum Cost

On 24th January 1949 Government appointed Sri T. N. Jagadisan Honorary Leprosy Prevention and Relief Organiser for the Firka Development Department (now Rural Welfare Department). In G.O. No. 69, Government said: "The question of tackling rural leprosy with a view to control, relieve and prevent the spreading of the disease in the villages without heavy expenditure to Government has been engaging the attention of Government for some time past.

"As most of the firkas and centres selected for Intensive Rural Reconstruction work are endemic with leprosy, the Government consider that it would be best to start the work of leprosy prevention, relief and control in the selected areas. The Government are therefore pleased to appoint Sri T. N. Jagadisan, Honorary Secretary, British Empire Leprosy Relief Association, as the Honorary Leprosy Prevention and Relief Organiser for the Firka Development Department."

Nature of Schemes for the Firkas

The Honorary Leprosy Prevention and Relief Organiser has put up proposals, so far, for the following firkas :—

(1) Kadambuliyur, South Arcot District,
(2) Kumbla, South Kanara District,
(3) Gara, Srikakulam District,
(4) Kalasapakkam, North Arcot District,
(5) Tirumangalam, Madurai District,
(6) Veerapandi, Salem District,
(7) Chinnasalem, South Arcot District, and
(8) Nagari, Chittoor District.

In assessing the prevalence of leprosy in the various firkas the Honorary Leprosy Prevention and Relief Organiser has had the invaluable help of the Health Officer in charge of the State Leprosy Survey Unit, Vellore, and the Health Officer in charge of the South Arcot District Leprosy Survey Unit. Though the particular schemes for the particular areas depend upon the special circumstances of an area, some general principles govern the nature of the schemes proposed for the firkas. The proposals contemplate the linking up of preventive and curative effort in a plan which would not be very costly to Government.

In view of the paucity of medical men available for rural work and in view of the cost of employing full-time medical personnel for rural leprosy work, the proposals, except in special circumstances, contemplate that an Honorary Medical Officer (either a private medical practitioner or a District Board employee in a rural hospital) after due training, will be responsible for the over-all general supervision of the curative and preventive work for leprosy in the area.

He will be assisted effectively by a Kushta Nivaran Sevak, a lay worker, who would be adequately trained for a period of six months.

Work of Kushta Nivaran Sevak

The Kushta Nivaran Sevak will assist the Medical Officer in running the clinic and besides, organise night segregation centres, village segregation centres, or advise the infective cases about home-segregation. His function is very important in the scheme and on him hangs the whole lot of follow-up and welfare work. He should constantly go round the villages, see that patients take to treatments regularly and that the infective cases observe one or other known modes of isolation. The Sevak should be in close touch with the population in order to detect new cases. He should particularly observe the contacts of cases and keep a continuous record pertaining to them. He should keep up the morale of the patient by acting as his friend, philosopher and guide. He should encourage the patients to occupy themselves. He should teach spinning to patients as this is the one occupation that can be taught to a wide number of people and is found to be particularly suitable for leprosy patients. He should try to resolve the social, personal and domestic difficulties of the patients with sympathy, imagination and resourcefulness. Where a problem is too difficult to be tackled by him he should call in the help of the senior authority in charge of the work.

From the preventive point of view his functions will be—

(i) to keep a definite record of leprosy cases, their contacts in the households and the number of early cases infected by the patients ;

(ii) to discover new cases in the areas ;

(iii) to advise and arrange for the isolation of the patients in their homes or at least prevention of close contact between patients and their children ; and

(iv) to ensure continued attendance of patients at the dispensary.

Besides the Kushta Nivaran Sevak, the Medical Officer will have an injector and a nursing orderly to work under him. The Kushta Nivaran Sevak will be trained for a period of six months at the Government Lady Willingdon

Leprosy Sanatorium, Chingleput, and the Kasturba Gandhi Leprosy Home, Mazhavanthangal. The injector and the nursing orderly except where otherwise specified will receive training for three months at the two institutions mentioned above. The schemes contemplate the putting up of buildings necessary for the operation of the scheme by voluntary effort.

We now proceed to a detailed consideration of the various schemes for the firkas.

Kadambuliyur Firka (South Arcot District).—As early as March 1947, i.e., nearly two years before his formal appointment as Honorary Leprosy Prevention and Relief Organiser for the Rural Welfare Department, Sri T. N. Jagadisan, Honorary Secretary of the British Empire Leprosy Relief Association, now *Hind Kusht Nivaran Sangh*, with the help and co-operation of Dr. T. R. Gopalakrishna Sarma, Field Leprosy Investigation Officer, Vellore, made an extensive survey of this firka. Subsequently Sri Jagadisan submitted proposals on which orders were passed in G.O. Ms. No. 4242, Public Health, dated 15th December 1948. Two Leprosy Clinics at Semmedu and Veeraperumanallur villages, with night segregation centres attached, were sanctioned. Sanction was also accorded to the employment of one Civil Assistant Surgeon, one compounder-*cum*-injector, one nursing orderly, one female helper and one peon. Sanction was also accorded to the following items of expenditure to the extent noted against them :—

	RS.	
Recurring—		
Diet	1,200 per annum.	
Medicines	500 per annum.	
Repairs and renewals.	200 per annum.	
Non-recurring—		
Furniture	500	for each of the two clinics.
Equipment	420	
Gardening and other tools.	40	
Microscope (to be used for both centres).	1,800	
Buildings	11,200	

A Medical Officer, who has been found to be enthusiastic and industrious and filled with a zeal for relieving and controlling leprosy in the area, has done extensive surveys. There are about 400 lepromatus (infective) cases out of a total of1, 987 cases of leprosy registered at the Veeraperumanallur Centre and about 170 lepromatus cases out of 857 leprosy cases registered at the Semmedu Centre. Sulphone treatment has been started at both the centres. The work has been done so well that the time has now come for putting up more detailed proposals for treating each and every case and for bringing in every infective case under one or other of the known modes of preventive measures. An encouraging feature of the work is that at both the centres public-spirited gentlemen of the locality have come forward with gifts of land and buildings.

Kumbla Firka (South Kanara District).—The Honorary Organiser made an extensive survey of the firka and submitted proposals for opening a leprosy clinic at Perdala village in charge of Dr. P. S. Shastri, a local medical practitioner who evinces deep interest in leprosy work and who has trained himself for the work at his own expense, with the following staff :—

One Kushta Nivaran Sevak, one male injector and one nursing orderly.

The Kushta Nivaran Sevak and the male injector finished their training and joined duty at Kumbla on the 16th January 1952, while the nursing orderly finished his training by the end of February. The actual work of the scheme has been started from 16th January 1952. At present the work is done in a building given for use rent free by the Honorary Medical Officer. A separate clinic is being built by local endeavour which is shortly expected to be ready. An expenditure of Rs. 1,000 on the purchase of equipment for the clinic and Rs. 1,000 for medicines has been sanctioned.

Gara Firka (Srikakulam District).—An extensive survey was made of the firka by the Honorary Organiser with the help of Sri V. Ramanarayana, a social worker in leprosy of rare zeal and at present Honorary Secretary of the Srikakulam District Branch of the Hind Kusht Nivaran Sangh. Proposals were submitted. The Government have accepted the recommendations of the Honorary Organiser for opening a clinic at Vomaravalli, to be placed in charge of a Medical Officer of the District Board Dispensary at Calingapatam which is about three miles away from Vomaravalli, in G.O. No. 1, Rural Welfare, dated 2nd January 1952, with the following staff :—

One Kushta Nivaran Sevak, one male injector and one nursing orderly.

Action is being taken by the Honorary Organiser for selecting the requisite personnel or the staff and their training. After the training of the staff, i.e., in about a period of six months, the clinic will begin to function.

Kalasapakkam (North Arcot District).—In February 1949, the Honorary Organiser conducted with the help of Dr. G. K. Sarma, Field Investigation Officer, a survey of Kalasapakkam and villages around it. The incidence of leprosy was found to be high and proposals were put up for a clinic at the place. Dr. Hariharan, Health Officer, Provincial Leprosy Survey Unit, conducted an extensive survey of Vilvarani (Polur Taluk) and its environs to ascertain the incidence of leprosy in January 1951. He was of the view that Kalasapakkam Firka was highly endemic for leprosy, there being in Vilvarani group alone 119 infective cases of a total of 225 cases, i.e., more than 50 per cent of the cases were infective. He stated that the situation required preventive and control measures of an intensive type. On receipt of this report and in response to the request of Sri S. Theodore, a compounder who is running a leprosy out-patient clinic at Vilvarani giving treatment once a week to the local public, the Honorary Organiser visited Vilvarani on 11th February 1951. The out-patient clinic of Sri Theodore was visited and it was found that the disease in this area was serious, many cases being of advanced lepromatus (infective type with crippling deformities). Though the work of Sri Theodore did not naturally touch the fringe of the problem, it had created a favourable atmosphere for detailed measures of control.

In view of the seriousness of the disease and the peculiarity of its incidence in that more than 50 per cent of the cases were infective, the Honorary Organiser considered that only *intensive treatment* including sulphone therapy and *selective isolation* would check the spread of the disease in this area and eradicate it. With this end in view, it was recommended to Government that a colony of 100 patients may be established, the colony to be of semi-pucca construction, with provision for occupational therapy. The cost of construction was estimated at Rs. 35,000 with regular staff as for a hospital at a cost of Rs. 6,800. The scheme

has been approved for being considered as a Part II scheme in the Budget for 1952-53.

Tirumangalam (Madurai District).—During his visits to the firka in 1949, Sri Jagadisan found that the firka was badly infected with leprosy. He met Dr. Palaniappan, a private medical practitioner trained in leprosy work at the Lady Willingdon Leprosy Sanatorium, Chingleput, and an enthusiast in the cause of leprosy relief and control. Dr. Palaniappan offered his help in running a clinic at Kallupatti pending full proposals through the Rural Welfare Department. Sri Jagadisan advised the authorities of the Gandhi Niketan Ashram to start a clinic in some temporary shed with Dr. Palaniappan's help and they did so.

Again Sri Jagadisan visited the place in 1950 to see the clinic run by Dr. Palaniappan. About a 100 patients attended and it was pathetic to see that most of the patients had not received any treatment worth the name previous to the starting of the clinic. Sri Jagadisan therefore addressed Government in October 1950 for starting a clinic at Kallupatti which was sanctioned in their G.O. No. 1197, Rural Welfare, dated 14th November 1951. The clinic will be placed in charge of Dr. Palaniappan. A Kushta Nivaran Sevak has been selected for training and he joined the Chingleput Sanatorium on 1st February 1952. The selection of the male injector and the nursing orderly will be made in time for them to take their training soon. Government have also sanctioned the purchase of furniture and medicines, viz., Rs. 1,000 each.

Veerapandi (Salem District).—The public of several villages of the Veerapandi Firka represented to Government about the seriousness of the leprosy situation in the firka. This representation was forwarded by Government to the Honorary Organiser for examination and report. Dr. Hariharan, Health Officer, Provincial Leprosy Survey Unit, Nellore, was therefore requested to make an extensive survey of the incidence of leprosy in the firka. He made a full and very valuable report. The Honorary Organiser also visited three villages in the firka and several homes and it was found that the leprosy situation was fairly serious in some of the villages, especially because of the presence of a large number of infective cases and also because of the high rate of child incidence. Most of the villagers are weavers living in insanitary and over-crowded conditions which facilitate the spread of the disease. Proposals were therefore submitted to Government for the establishment of a leprosy clinic to be run in association with a Primary Health Centre in the village of Elampillai and the organisation of a colony of weavers with infective leprosy in the neighbourhood of Elampillai.

As regards the clinic, Government stated that as the opening of a Primary Health Centre has been deferred, the medical officer in charge of the District Board dispensary at Elampillai may be given training in leprosy relief work and placed in charge of the clinic on payment of a modest honorarium. The question of opening a colony of weavers will be taken up later. As soon as orders of Government are received, the training of the Kushta Nivaran Sevak, the male injector and the nursing orderly will be taken up by the Honorary Organiser.

Chinnasalem (South Arcot District).—The Honorary Organiser in company with Dr. A. Panchapakesan, District Leprosy Survey Officer, South Arcot, visited this firka on the 10th September 1951 and found that the firka was in the heart of an endemic belt for leprosy. Practically nothing has been done here so far for the treatment of leprosy, not to speak of the prevention of leprosy. The extensive survey of some of the villages conducted by the Health Officer in charge of the Provincial Leprosy Survey Unit confirmed the view that the situation in this area should be considered serious for leprosy.

Proposals were therefore made for the opening of three clinics, at Kallakurchi Hospital, at the L.F. Hospital, Chinnasalem, and at the L.F. Hospital, Kacharapalayam, with a staff of one Kushta Nivaran Sevak, one male injector and one nursing orderly, the clinic in each case being in charge of the medical officers of the respective places who will be paid an honorarium. Provision was also made in the scheme for the purchase of equipment and other non-recurring expenses at Rs. 500 for each clinic and Rs. 2,000 for the purchase of medicines for each clinic. The scheme is awaiting sanction.

Tiruvallur Firka (Chingleput District).—The firka is reported to have leprosy only in a few villages. The Health Officer in charge of the State Leprosy Survey Unit is making a detailed investigation of the leprosy situation in the firka. Proposals will be framed by the Honorary Organiser after the receipt of the survey report.

Nagari Firka (Chittoor District).—A study of the admissions in the Government Lady Willingdon Leprosy Sanatorium, Chingleput, and the reports personally given by the patients indicated to the Honorary Organiser that Nagari was one of the areas badly affected with leprosy. This view was borne out by the findings of Dr. N. Vijayaraghavan, Health Officer, State Leprosy Survey Unit, who made detailed suggestions. In a simple survey of 51 villages in the firka 589 cases were detected; of these as many as 318 were of the lepromatus (infective) type. Considering that the survey was a sample one, it may be expected that there are perhaps actually twice the number of cases detected. A scheme for the control of leprosy in the firka was therefore submitted to Government by the Honorary Organiser in November 1951. The compact range of the area was considered to present very favourable conditions for the control of leprosy by a wide-scale and well-planned administration of sulphone drugs, a method now advocated by leprologists all over the world. It was suggested that the problem should be tackled by taking sulphone drugs to the door of the patient as far as possible by organising a wide number of clinics and ensuring that the maximum number of patients in the area received the most regular treatment with sulphone drugs.

For this purpose it is considered that the Medical Officer and his staff should move about in a jeep and take the treatment to as many groups of villages as possible. There will be a treatment and a preventive unit for leprosy with headquarters at Nagari and with a central well-equipped clinic at Nagari which will also have six beds for leprosy cases needing temporary hospitalisation for reactions, inter-current illness, minor surgical conditions, etc. The clinic and ward may be located in a rented building in or near Nagari. The unit will be provided with a jeep to enable the Medical Officer and his staff to organise and visit about ten other treatment centres in badly affected villages like Damarapakam, Pannuru, Chivada etc.

The following staff was recommended for the work :—

- One Civil Assistant Surgeon.
- One Female Nursing Orderly.
- One Male Nursing Orderly.
- One Thotti or sweeper.
- One Peon.
- One Kushta Nivaran Sevak.
- One Health Inspector.
- One Peon for the Health Inspector.

Government were requested to sanction a recurring expenditure of Rs. 9,000 and a non-recurring expenditure of Rs. 4,000 for the scheme, besides provision for the purchase of a jeep for the use of the Unit. The proposal will be treated as a Part II scheme during 1952–53.

It is devout y hoped that these carefully conceived, if modest schemes, will be executed with enthusiasm and devotion. In these firkas chosen for intensive rural development, the schemes have every chance of success, for here we have a set-up in which the first essential for success—public co-operation—can be stimulated and maintained.

(*Continued from page* 26)

The Newer Knowledge of Nutrition

The science of nutrition today has advanced enough to make it established as one of the major branches of preventive medicine. The FAO and WHO joint expert committee has drawn attention to the need for giving more adequate instruction on the principles and practice of nutrition to medical men and public health workers. Knowledge of nutrition should spread among the people so that the available food resources can be used to the best advantage. Health Bulletin No. 23 on the "The Nutritive Value of Indian Foods and the Planning of Satisfactory Diets" published by the Nutrition Research Institute, Coonoor, gives most valuable information. The nutrition work of the Public Health Department will shortly be reorganised and steps taken to spread the knowledge and application of the principles of nutrition among teachers, students and the general population. It is proposed to give training in nutrition to persons in charge of hotels, hostels, industrial canteens and other public feeding institutions with a view to enable them to prepare cheap balanced diets.

The problem of well-balanced diets for the masses in our country lies in being able to suggest how eight annas could be made to do the work of a rupee. It is the duty of the State to bring enough of the right kinds of food within the reach of all its people. The agricultural policy must be related to the nutritional requirements of the people. The encouragement of the production and consumption of protective foods should become an important part of our public health work. A marked improvement has taken place in the national dietary of several countries compared with pre-war years as a result of increased food production and effective nutrition teaching and propaganda. It must be our endeavour to raise the nutritional level of our people in a similar way.

—*A.I.R., Madras*

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Synthetic Rice

By DR. V. SUBRAMANIAM, D.SC., F.R.I.C., F.N.I., Director, Central Food Technological Research Institute, Mysore

The subject of synthetic rice has aroused a great deal of interest both in this country and abroad. We do not ourselves call the product 'synthetic rice'. We call it 'synthetic grain', as our object is to reconstitute the properties of a grain. The very term synthetic, though scientifically sound, does not carry the right popular appeal.

The concept of producing such a grain arose from the acute grain shortage in the country. We are deficient in regard to all types of grain, but the biggest shortage is in regard to rice. The rice-eating population constitutes the biggest group in the country. The demand keeps on increasing from year to year, while our production is not able to keep pace with it. It naturally occurred to us that, to make up the deficit, we should try and evolve a composition corresponding to that of rice from food materials which are either abundantly available or which, at any rate, can be produced in much larger quantities per acre than rice. This composite produce should then be made into a grain that can be cooked and consumed in the same way as rice. If, added to that, we can give the produce the shape and size of rice, it will have a greater popular appeal.

Speaking broadly, natural rice has 75 to 80 per cent starch, and about 7 per cent protein. It also contains some percentage of water, minerals, certain water-soluble vitamins, and so forth. The grain is not considered to be very nutritious, chiefly because the protein, though of good quality, forms only a small percentage. On the other hand, the grain is very easily cooked and is easily digested. It is versatile in its application, so much so that a rice-eater never tires of it. It is well known to nutrition scientists that starch from one source can take the place of the same ingredient from another course.

Tapioca and Groundnut

Among the sources of starch, tubers have long been known to be the heaviest yielders from land. Under almost similar conditions, potato, sweet potato or tapioca will yield more starch per acre than any form of grain. Among these, the potato is already being consumed as a vegetable and is rather expensive. The sweet potato contains sugar and certain other principles which do not make it readily acceptable. Tapioca, on the other hand, is relatively easy to produce abundantly. The flour has also a satisfactory taste.

To make up the deficiency of protein, we found groundnut flour to be eminently satisfactory. This flour can be obtained as an attractive white product if the necessary precautions are taken to remove the adhering dirt and the silver skin, also known as cuticle. If the treated groundnut is then pressed it loses most of the oil, and can then be ground to an almost white flour. If the oil can be completely removed by select extraction, the product will be still more satisfactory.

We found that a combination of 90 per cent white tapioca flour and about 10 per cent groundnut flour had nearly the same composition as rice. The nutritive value was also of the same order. To make it still better, we found it desirable to make groundnut flour 12½ per cent to 15 per cent of the product. We also add small quantities of calcium to further enrich the product.

Evolving a Satisfactory Grain

It was not an easy matter to convert this apparently simple mixture into a satisfactory grain. We found, however, that on mechanical shaking the tapioca groundnut flour mixture, with the correct amount of water, lends itself to the formation of a round grain. This grain, by itself, has no strength, so we found it necessary to gelatinise the starch by pre-heading the moist grains to some extent. If the grain is then carefully dried and then given a further period of roasting, it forms hard grains that can be easily cooked and eaten in the same way as rice.

The method of cooking the product is practically the same as that of rice, with the slight difference that the grain has to be dropped into the water after it comes to the boil. The cooking is usually complete in 7 to 8 minutes, which is about one-third of the time taken by rice. After cooking, the gruel can be drained out in the same way as in the rice. The grains will then stand apart and can be used with savouries or sweets as may be desired.

Apart from the usual growth experiments with animals, we have also conducted extensive consumer trails. Most consumers have found the product readily acceptable and easily digested. At the same time, a fair number have pointed out that the product is inclined to be somewhat more glutinous or sticky than rice. This is a physical property inherent in all tuber starches, and we are now concentrating on altering this property to correspond to that of rice starch.

A fair size unit can produce anything from half to one ton of grain per hour. Even one such unit will be sufficient to feed a population of fifty to seventy thousand people. If many more such units can be installed, we can easily produce lakhs of tons of grain, which will go a long way towards meeting our present shortage.

Cheaper than Rice

The programme of producing synthetic grain need not, in any way, interfere with the present projects for producing more rice in the country. Tapioca comes out well on dry land, as also on hill slopes where rice cannot be grown. It is a heavy yielder, and although the average yield on a poor soil is only about 3 tons per acre, as high yields as 40 tons on rich soils have been reported. In the plantation areas and delta districts, we can ordinarily expect a yield of 7 to 10 tons per acre. Groundnut is also abundantly available, and if necessary precautions are taken, a substantial part of the groundnut produced in the country can be made into an attractive flour suitable for use as a human food. We can also incorporate some of the pulses, or small percentages of certain millets such as jowar, which would further improve the flavour of the product.

The raw materials used for the production of synthetic grain cost between Re. 0-2-3 and Re. 0-2-6 per pound. The processing will cost about Re. 0-0-9 per lb. and should not ordinarily exceed Re. 0-1-0 per lb. With increased production of raw materials and also improvements in the method of processing, it should be possible to bring down the cost of the finished product to Re. 0-3-0 per lb. or even less. This will make it distinctly cheaper than rice.

There is, however, need for caution in one respect. Although the scientists may prescribe the composition, it is possible that people who are not very scrupulous may bid cheap fillers to make up the bulk. This would yield an inferior product, of low nutritive value. To avoid this the Government should either set up its own factories, or, at any rate, license the manufacturers with the condition that the product should be open to Government inspection from time to time. Such a procedure is already under the serious consideration of some of the South Indian States.

Give it a Trial

We have had opportunities of demonstrating both the method of processing and the preparations made out of the cooked product, during several exhibitions, and particularly during the All-India Exhibition held at Trivandrum during January-February 1951. More than a lakh of people saw the process, and several thousands ate and relished the product. We had the privilege of serving food made out of synthetic grain both to the Working Committee and to the All-India Congress Committee when they met recently in Bangalore. Many who were once sceptical about its possibilities are now gradually getting convinced not only about the usefulness, but also the importance of developing such a product.

We are anxious that in the interest of the consuming public, the Government should lay down the necessary rules and see that the right type of product, conforming fully to the specifications, is made and supplied to the public.

We are concentrating on producing a grain that will correspond to rice in its composition and nutritive value. This is, however, only a beginning. At comparatively very little additional cost, it should be possible to improve the nutritive value of the product, so much so that we can produce a product which will have 1½ to 2 times the nutritive value of rice.

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The Coconut Industry in India

By SRI K. GOPALAN, Secretary, Indian Central Coconut Committee

Of the 1·51 million acres under coconut in India, two-thirds are in Kerala and the remaining one-third distributed over the South Kanara, East Godavari, West Godavari and Tanjore Districts of Madras State and certain portions of the States of Mysore, Bombay, Orissa and West Bengal. At the present prices, the annual production of coconut in India is valued at about 78 crores of rupees. The *Kalpavriksha*, "The Tree of Wealth" or the "Consul of the East", by which the tree is sometimes known, signifies the uses to which the different parts of the trees are put. In no part of India, however, does the tree so vitally influence the lives and fortunes of the people, as in Kerala, where it truly constitutes the staff of life on which millions lean. Preparation of copra, oil crushing, coir spinning and manufacture of mats and mattings are some of the important industries which have grown round the tree and provide occupation and the means of livelihood to tens of thousands of people.

Deficit Country

In spite of the fact that the area under coconut in India is, after those of the Philippines and the Netherlands East Indies, the highest in the world, ours is a deficit country in coconut. Prior to World War I, India had a surplus of coconuts and was one of the chief sources of supply of copra and coconut oil to the world markets. Since 1926–27, however, the country has been converted into a net importer of both copra and coconut oil. About that time, as a result of competition from other vegetable oils and animal fats, Ceylon had lost many of her foreign markets and she was looking for new outlets for her surplus stock of coconut products. And in India she found a convenient market near at hand and her loss of exports elsewhere was made good by dumping large quantities into this country. Ceylon's good-fortune, however, spelt disaster to India. These large imports at "distress prices" had resulted in the catastrophic fall in the price of the local produce and great distress among the coconut growers in the country.

And as the World War II advanced, Ceylon lost almost all the European markets for her coconut products and she placed unusually large quantities on the Indian markets. This accounted for an all-time record net import of 184,329 tons (in terms of copra) of coconut products in 1940–41 or about 28 per cent of India's annual requirements. With the occupation by the Japanese of the coconut-growing countries of South-east Asia, the position was greatly altered. There was a demand from many quarters for Ceylon's coconut products and between 1941–42 and 1947–48 the distribution of the exportable surplus of copra and coconut oil in Ceylon came under the control of H.M's Government in the United Kingdom, who allotted to India only limited annual quotas. Since August 1948, however, India has been making her own arrangements with Ceylon with regard to the import of her requirements of copra and coconut oil. Because of the limited quantities of coconut products available in the surplus coconut producing countries for export, India's imports have in recent years declined to an appreciable extent. But there is no doubt that if larger quantities were available, our imports of coconut products would have been on a much larger scale than at present.

Coir Industry

Round the coconut has also grown the coir industry which is one of the great fibre industries of the world. India is undoubtedly the world's principal producer of coir fibre and coir goods. Our annual output during the last five years was of the order of about 132,600 tons of coir fibre, valued at about 15 crores of rupees. During the last five years, India has accounted for an annual average export of 590 tons of coir fibre, 44,000 tons of coir yarn, 21,000 tons of coir mats, rugs and carpets, 4,000 tons of coir ropes and 3,800 tons of "coir, other sorts". At the same time she has also distributed for consumption in India about 1,400 tons of coir fibre, 19,300 tons of yarn and 22,500 tons of coir products.

It may be interesting to note some of the important reasons which have contributed to the conversion of the country from an exporter to a net importer of coconut products. For some years now there has been in the country an increasing demand for coconut oil to feed its growing industries, particularly those connected with the manufacture of soap and toilet articles. Recent years have witnessed a large development of the soap industry in the country and "for making cold process soap coconut oil is the oil *par exeell nce*". The pre-war annual consumption of about 30,000 tons of coconut oil in the Indian soap industry has now increased to about one lakh tons.

Demand for Coconut Oil

The large volume of imports during the period 1929 to 1939 had the effect of depressing the local price of indigenous coconut to uneconomic levels and this was followed by a widespread neglect of their gardens by our growers. Manurial and cultural operations were seldom undertaken and there was practically no under-planting. Regular under-planting is an important feature of coconut cultivation for every year a certain percentage of trees go out of economic production due to old age and the decline in production is usually checked by a judicious system of under-planting when the trees are about sixty years old. During the depression period, because of the uneconomic prices of coconut, most growers could not spare the capital required for the under-planting and cutting and removing old and unwanted trees. As a result of the twofold neglect of manuring and inter-cultivation and under-planting, the yield of the trees and the overall production in the country had suffered a great set back. The root and leaf diseases, which have affected the coconut trees in Travancore-Cochin, had contributed to make matters worse. About one-third of the area under coconut in the State has been so affected, and the intensity of the incidence of the diseases may be appreciated from the fact that there is now an annual loss of about seven crores of rupees on account of the reduction in the yield of coconut caused by these diseases.

Demand and Supply

These and other reasons have combined to widen the gulf between the supply of and the demand for coconut products in the country. The short-fall in our production of coconut is as much as 25 to 30 per cent of our requirements. The world position of oils and fats is also far from satisfactory and there is no prospect either of large imports of coconut oil becoming available in the foreseeable future.

The problem of problems set before us is therefore how best to rehabilitate the industry and bridge the gulf between production and demand so that the industry may be placed on its own legs and be freed from the nightmare of foreign competition. The question of stepping up production may be answered by increasing the yield from the present gardens and by bringing more area under coconut. From the short-term point of view, the yield may be stepped up by adopting scientific methods of cultivation and giving the existing trees proper care and by timely control of the pests and diseases affecting them. Investigations have shown that by regular inter-cultivation and manuring the yield of the tree can be increased by fifty per cent.

The production and distribution of green manure seeds to produce green manure for meeting the deficiency in organic matter in the soil would also help to increase the yield. Replanting or under-planting in bearing gardens when the trees are about 60 years old is also necessary to check the decline in production in the garden. From the long-range point of view the output of coconuts can be increased by bringing new areas under cultivation. It is true that most of the land suitable for coconuts in the existing coconut growing tracts has already been brought under the crop. The area may, however, be extended by cultivating coconuts on virgin land at the foot of the Western Ghats, on the embankments of the irrigation canals and channels, on the margins of roads, on suitable lands on either sides of the railways, on the borders of rice fields and on the banks of rivers. States like West Bengal and Assam and the Andamans also afford a good deal of scope for coconut cultivation. The production can also be augmented by planting selected quality seedlings which when they grow into trees would yield about 50 per cent more nuts than seedlings of uncertain quality. In any case, the most resourceful method of stepping up the production immediately is to intensify the cultivation and make the trees grow two coconuts where one grew before, by proper scientific cultivation.

Our efforts to increase production can yield satisfactory results only with the co-operation of the thousands of small coconut growers. As a result of the present favourable prices of coconut and the intensive propaganda the Indian Central Coconut Committee are carrying on, we may reasonably hope that the long-looked for rehabilitation of the coconut industry in India, to which considerable damage was done during the thirties of the century, may be witnessed in the near future. This may help not only to ward off the evil effects of dumping foreign copra and coconut oil but also restore the country to the status she enjoyed before World War I, as an important exporter of coconut products.

Japanese Paddle-operated Threshing Machine

The Indian Agricultural Research Institute, New Delhi, recently imported a few Japanese agricultural implements to explore the possibility of their use in this country. One such machine, viz., the paddle-operated threshing machine, has since been tried and considered advantageous under Indian conditions.

The Government of India have now suggested to the State Governments that, if interested, they may get such threshing machines manufactured through local fabricators for sale to cultivators.

Japan began production of paddle-operated threshing machines on a large scale in 1914. Due to the boom and labour shortage during World War I, these machines were welcomed by the farming community and soon became very popular.

The machines are simple time-saving appliances for threshing paddy. They are light in weight, simple in construction, easy to manufacture and convenient to operate. There are no delicate parts that can get damaged nor are there any fine adjustments to make. Not difficult to handle, they can be easily carried from place to place. They are manufactured in two different sizes suitable for being worked by one or two men, and thus with the minimum of labour maximum efficiency is secured and it becomes possible to divert bullock-power to ploughing the land and doing other important field work.

It has been calculated that by using this machine, about Rs. 2–12–0 can be saved on 25 maunds of grain threshed. The machine is also less strenuous to operate than the present practice of hand-threshing.

The machine may be built at a total cost of Rs. 95, but the cost may be reduced by 10 to 15 per cent if mass-produced.

Use of Oil Engines to Tide Over Power Shortage

Owing to cuts in the supply of electric power, many owners of factories, workshops and work places have applied for permission and licence for the installation and the use of oil engines to tide over the power shortage. The Government have carefully examined the matter and consider that in places where the cuts in the supply of electric power operate, permission and licence may be granted by local bodies and their executive authorities to the owners of factories, workshops, and workplaces for the installation and working of oil engines to tide over the period of power cuts, provided that the factories, etc., are situated in non-residential areas.

Crop Reports

Pepper

The area under pepper in 1951–52 in the districts of Malabar, South Kanara and the Nilgiris is estimated at 102,500 acres (88,000 acres in Malabar District, 14,400 acres in South Kanara District and 100 acres in the Nilgiris District). Compared with the final area of 105,500 acres (91,000 acres in Malabar District, 14,400 acres in South Kanara District and 100 acres in the Nilgiris District) the present estimate shows a decrease of 2·8 per cent. Compared with the average area of 99,600 acres (88,300 acres in Malabar District, 11,200 acres in South Kanara District, 100 acres in the Nilgiris District) for the five years ending with 1950–51, the present estimate shows an increase of 2·9 per cent.

The condition of the crop is reported to be below the normal in the districts of Malabar, South Kanara and the Nilgiris. The Seasonal Factor is estimated at 80 per cent of the normal for the district of Malabar, 70 per cent of the normal for South Kanara District and 95 per cent of the normal for the Nilgiris District as against 95 per cent of the normal for Malabar, and 100 per cent of normal for the districts of South Kanara and the Nilgiris for the previous year. On this basis, the yield is estimated at 6,800 tons (5,940 tons in Malabar District, 850 tons in South Kanara District and 10 tons in the Nilgiris District). Compared with the yield of 8,520 tons estimated for the previous year (7,290 tons in Malabar District, 1,220 tons in South Kanara District, 10 tons in the district of Nilgiris), the present estimate shows a decrease of 20·2 per cent. Compared with the average yield of 8,280 tons (7,290 tons in Malabar District, 980 tons in South Kanara District, 10 tons in the Nilgiris District) for the five years ending with 1950–51, the current year's estimate reveals a decrease of 17·9 per cent.

The wholesale price of pepper per Imperial maund of 82-2/7 lb. of 3,200 tolas as reported from important market centres on 8th March 1952, was Rs. 331 in Cochin, Rs. 315–15–0 in Mangalore, Rs. 301–14–0 in Kozhikode, and Rs. 299–5–0 in Tellicherry. Compared with the prices published in the corresponding period of last year, i.e., those which prevailed on 10th March 1951 these prices reveal a decrease of 31 per cent in Mangalore and Kozhikode, 29 per cent in Cochin and 20 per cent in Tellicherry.

Groundnut

Summer Crop : Area and Yield.—The area under the summer crop of groundnut in parts of the Madras State during the five months January to May 1952 is estimated at 82,500 acres. Compared with the estimated area of 86,200 acres for the corresponding period of last year and an average area of 84,800 acres calculated for the previous five years, the current estimate shows a decrease of 4·3 per cent and 2·7 per cent respectively. An increase in area is estimated in the district of Tiruchirappalli and a decrease in the districts of Cuddapah, Nellore, Chingleput, South Arcot, Chittoor, North Arcot, Tanjore, Madurai and Ramanathapuram. The estimated area was the same as that of last year in the district of Anantapur. The decrease in area this year is largely due to inadequate rains at the time of sowings.

The yield per acre is expected to be normal in the district of Ramanathapuram and below the normal in the other districts of the State. The crop is reported to have been affected by pests in parts of Tanjore District and by inadequate rains in the districts of Chittoor and Tanjore. The total yield is estimated at 59,300 tons (unshelled nuts) as against 63,700 tons (unshelled nuts) estimated for the corresponding period of last year showing a decrease of 6·9 per cent. Compared with the average yield of 68,600 tons (unshelled nuts) calculated for the past five years, the current estimate shows a decrease of 13·6 per cent.

Early Crop.—The area under the early crop of groundnut up to 25th July 1952 in the districts of Salem and Coimbatore is estimated at 140,000 acres. Compared with the area of 143,000 acres estimated for the corresponding period of last year, and an average area of 142,200 calculated for the past five years, it shows a decrease of 2·1 per cent and 1·5 per cent respectively. The decrease in area this year is largely due to want of rains at the time of sowings.

The yield per acre is expected to be below the normal in Salem and Coimbatore Districts. The total yield in these districts is estimated at 57,600 tons (unshelled nuts). Compared with estimated production of 53,900 tons (unshelled nuts) for the corresponding period of last year and an average yield of 76,300 tons (unshelled nuts) calculated for the previous five years, the current estimate is an increase of 6·9 per cent and a decrease of 24·5 per cent respectively.

The wholesale price of groundnut (machine shelled) per maund of 82-2/7 lb. or 3,200 tolas as reported from important market centres on the 2nd August 1952 was Rs. 24–13–0 in Vizianagaram, Rs. 24–3–0 in Guntur, Rs. 23 in Cuddapah, Rs. 22–5–0 in Nandyal and Bellary, Rs. 21–14–0 in Salem, Rs. 21–11–0 in Adoni, Rs. 21–2–0 in Vellore, Rs. 20–15–0 in Cuddalore and Rs. 20–13–0 in Erode. Compared with the prices which prevailed on 4th August 1951, these prices show a decrease of 35·7 per cent in Cuddalore, 35·1 per cent in Bellary, 32·8 per cent in Salem, 32·2 per cent in Erode, 28·5 per cent in Vellore, 26·3 per cent in Cuddapah, 26·2 per cent in Nandyal, 24·4 per cent in Adoni, 22·8 per cent in Vizianagaram and 21·2 per cent in Guntur.

Gingelly

The area under gingelly up to 25th July 1952 is estimated at 272,200 acres. Compared with the area of 287,000 acres estimated for the corresponding period of last year and an average area of 279,300 acres calculated for the past five years, it shows a decrease of 5·4 per cent and 2·5 per cent respectively. The decrease in area this year is due mainly to want of adequate rains at the time of sowings.

An increase in area is estimated in the districts of Bellary, Anantapur, Nellore, Chittoor and South Kanara, and a decrease in the other districts of the State except in Visakhapatnam, Kurnool, Tanjore and Malabar Districts where the area was the same as that of last year. The decrease in area is marked in the district of Coimbatore (5,700 acres).

AGRICULTURE

The yield per acre is expected to be normal in the districts of Visakhapatnam, Bellary, South Arcot, Salem, Ramanathapuram and South Kanara and below the normal in the other districts of State except in the districts of East Godavari, Guntur, Kurnool, Chittoor, North Arcot, Tiruchirappalli, Tanjore and Madurai, where the sowings have just been completed and it is too early to report on yield in these districts.

The wholesale price of gingelly seed per maund of 82-2/7 lb. (3,200 tolas) as reported from important market centres on 2nd August 1952, was Rs. 33-14-0 in Tuticorin, Rs. 33-10-0 in Salem, Rs. 33-7-0 in Cuddalore, Rs. 32-15-0 in Tiruchirappalli, Rs. 32-3-0 in Eluru, Rs. 31-12-0 in Rajahmundry, Rs. 28-2-0 in Kakinada, Rs. 26-2-0 in Visakhapatnam and Rs. 23-1-0 in Vizianagram. Compared with the prices which prevailed on 4th August 1951, these prices show an increase of 11·2 per cent in Tiruchirappalli and 5·2 per cent in Tuticorin and a decrease of 30·6 per cent in Visakhapatnam and 26·5 per cent in Vizianagaram, 25·2 per cent in Kakinada, 22·8 per cent in Rajahmundry, 8·4 per cent in Cuddalore and 7·2 per cent in Eluru.

Experimental Research on Artesian Wells

The Government have sanctioned a proposal to conduct experimental research in regard to the conservation of underground water in the artesian basins of South Arcot, East Godavari and West Godavari Districts for using this natural resource to irrigate as many acres of lands as possible, minimising wastage of water. The Government have already sanctioned two schemes for the sinking of 121 artesian wells at a total cost of Rs. 9,46,000 in the contiguous areas of Vriddhachalam, Cuddalore and Chidambaram Taluks of South Arcot District, where strong artesian springs are known to exist at a reasonable depth. The first scheme for the sinking of 20 wells in South Arcot has been practically completed, while the second one for the sinking of 101 wells is nearing completion. Another proposal for the sinking of as many as 124 artesian wells in East Godavari and West Godavari Districts where also an artesian basin has been located, is under the consideration by Government.

In addition to these Government wells, there are over 40 private artesian wells in South Arcot District and about 100 artesian wells in the East and West Godavari Districts. The Director of Industries and Commerce has reported that in the artesian basins of South Arcot as well as East Godavari and West Godavari, the flow from artesian wells is not constant and that one of the major problems facing the well drilling engineer is that of maintaining well-yields as close to their original level as possible. At present a completed well is not disturbed, till it actually fails. Water is allowed to flow throughout the year whether it is required for irrigation or not, and even during the rainy season, with the result that much of the underground water is wasted.

Steel pipes used for lining the borewells are gradually eaten up in some cases and in some other cases fine sand that enters the tube along with the artesian spring gradually lifts up the bottom of the tube with the result that the rise and flow of water stops. Further, due to defects in the lining pipes, some quantity of the artesian water escapes into intermediate water formations, and this is a wastage that should be stopped.

Work to be Undertaken

According to the scheme sanctioned recently by the Government, the Industries Department will undertake the following items of work :—

(i) Taking soundings of existing artesian wells regularly at intervals of a fortnight or a month.

(ii) Measuring discharges of artesian wells once a month.

(iii) Agitating and cleaning the wells, the bottoms of which show signs of rising.

(iv) Connecting the surface levels of sites of artesian wells with reference to the mean sea level.

(v) Fixing stop valves to some wells and regulating the flow of water.

(vi) Sinking six wells to determine the optimum distance at which artesian wells should be spaced to avoid mutual interference.

(vii) Chemical treatment of casing pipes to prevent corrosion of artesian water ; and

(viii) Determining the acreage of different crops that can be raised from artesian springs.

The Industries Department also proposes to find out the rate of flow of water in particular areas by varying the actual depth up to which the artesian bores may be taken.

The Government have agreed that experimental work proposed to be done is necessary in order to evaluate the actual potentialities of artesian wells and have sanctioned an expenditure of Rs. 40,500 (rupees forty thousand and five hundred) for expenditure on six experimental wells at Rs. 6,000 each (two for South Arcot District, two for each of West and East Godavari Districts) and the employment of staff for a period of six months.

Subsidies to Rural Medical Practitioners

The Government have sanctioned the payment of subsidies to the Rural Medical Practitioners and Maternity Assistants in the Rural Dispensaries of Indigenous Medicine in the following places. The subsidy will be payable with effect from April 1, 1952, or with effect from the employment of the staff, as the case may be—

Pendalapaka and Kazuluru, East Godavari District ; Sindupatti and Elumalai, Madurai District ; Chinnacherukur, Chinnacherukur Panchayat, Nellore District ; Kollur, Guthigar and Shirthady, South Kanara District.

More Research Institutes to be Opened

Three more national research institutes will be formally opened before the current budget year finishes. These are the Central Building Research Institute, Roorkee; the Central Electro-Chemical Research Institute, Karaikudi, and the Central Leather Research Institute, Madras. Foundation stones of these institutes were laid some time back, the respective dates being February 10, 1951; July 25, 1948, and April 24, 1948. And, as has been the practice in the case of the other national research institutes, work has been taken on hand even before the completion of the buildings. But research work will attain full momentum when the provision of the facilities needed for research is complete and the institutes are ready for their formal opening.

Building Research

The development of science, technology and industry have brought in their wake revolutionary changes in building materials and the design and construction of structures suited to the diverse requirements of modern civilised life. Traditional materials are being improved and newer materials evolved. Apart from the provision of protection and shelter against the inclemencies of the weather, and the vagaries of nature, buildings have to be designed and constructed to meet a variety of other purposes. Modern man also requires more comfort on which his efficiency depends. The tempo of constructional work is thus rapidly increasing; the speed of construction, and economic and social factors are becoming more and more important. Our housing requirements are of colossal dimensions. Also, the cost of the demand on labour materials are increasing. Speedier and economical methods of construction have, therefore, become an urgent necessity. Even a small per cent reduction in the cost and increase in the speed of construction will result in enormous savings and improvement in the living conditions of the people.

The Central Building Research Institute is concerned with these vital problems and its functions include examination of building materials in use, examination of new materials used in the building, for example, cement, plaster, bricks, etc. With this end in view, the nucleus unit of the Institute has undertaken research projects intended to use indigenous material in production of better houses at low costs, the main object being to produce cheap houses for villages. As a result of the experiments, a hut with a roof of *katcha* mud tiles, a floor of cement stabilised soils and plasters from sun-dried brick walls was prepared. This model hut has been exposed to weather for more than one year and has stood out well.

Attempts are being made to evolve methods of soil stabilisation with cheap and easily obtainable materials such as hydrolysates of horns and hoofs, glue, cowdung, etc. Lime sludge, a waste product from sugar factories, is also being tried in admixture with small preparations of sodium silicate; the results may be said to be encouraging. Investigations on the possibility of replacing cement partially or completely by other materials obtainable at a lower cost as stabilisers are also proceeding. A systematic study of conditions of firing and of raw materials used in brick making in various parts of the country has been undertaken with a view to investigate economics of inferior quality bricks usually produced in the brick kilns. Other lines of investigations in hand include puzzolinas from surkhi and lime foamed concrete, exfoilation of vermiculite, comfort studies of houses, etc.

Electro-Chemical Research

Electro-chemical industries are of fundamental importance to the industrial development of the country. A beginning in these has only been made in India during the war years and some industries have been developed; but there is an unlimited scope for the expansion of existing industries and starting of new ones. With the development of various hydro-electric projects and availability of abundant supplies of power, the field will soon be set for the establishment of many new lines whose manufacture in India is feasible but has not yet been started.

The main function of the Central Electro-Chemical Research Institute is to carry on investigations with a view to increasing the productive capacity and efficiency of these industries and foster the development of new industries, utilising Indian raw materials. Organic and inorganic substances, electro-deposition, electro-winning and refining, passivity and corrosion, electro-metallurgy, electrolysis of fused salts, electro-thermal processes and other electrically activated chemicals will be intensively studied. Provision will be made to assure effective co-ordination between the work of the Institute and other national laboratories where their activities cover similar fields.

Leather Research

The art of making leather is as old as man. Whether Adam and Eve were dressed or not in skins of leopards as depicted in works of art, there is sufficient evidence available to show that men and women wore leather garments as far back as the palæolithic period (20,000 B.C.). The Indian leather industry has also a historic tradition; there is reference to this industry in the Rigveda.

Recent estimates of India's animal population place the figure at nearly 16 crores. Because of this animal wealth, India is one of the world's largest producers of hides and skins. The country's export trade in leather and leather manufactures is as follows:—

Raw hides and skins	Rs. 9·35 crores.
Tanned and semi-tanned hides and skins.	Rs. 19·98 crores.
Leather manufacture including footwear.	Rs. 21·08 crores.
Total ..	Rs. 50·41 crores.

The organised Indian tanning industry has a net annual outturn of nearly Rs. 8·53 crores. In addition to this, tanning is also carried on as a cottage industry but data on its exact volume is not available. The manufacture of footwears, indigenous and western type, has been estimated at nearly 6,000,000 pairs per annum. Nearly 500 tons of leather belting are manufactured every year.

The Indian leather industry is still characterised by the two chief attributes of its past tradition; it has essentially

Order of Priority Refixed for Assignment of Land

The Government have refixed as follows the order of priority in regard to the assignment of lands :—

(*a*) Landless poor persons (this includes Harijans and backward classes); (*b*) Political sufferers, who are eligible for land grant under the latest instructions, and ex-servicemen of World War II (this includes Indian National Army personnel) who do not possess more than five acres of wet or ten acres of dry land.

remained a decentralised cottage industry in spite of the few big organised tanneries, and it has continued to be a craft based more on empirical knowledge than on modern scientific methods.

Hides and skins to be converted into leather have to go through the following general finishing. These include a number of detailed operations making the whole process highly complicated. Each operation alters the skin physically as well as chemically; chemical, bacterial and enzymic reactions, influenced by temperature, concentration, acidity or alkalinity, age of the liquors and period of treament play great part in these operations. The chemistry of leather manufacture is so complex that in order to understand it one has to possess a good knowledge of chemistry, physics, bacteriology and physiology.

The short-term programme of work at the Central Leather Research Instutute, Madras, includes research on curing of hides and skins with Didwana salt ; adaptive research on tanning processes to improve the qualities of upper shoe leathers such as box and willow sides, glaced kid, industrial leather for picking bands, sole leather, belting leather, industrial leather for roller skins, chamois leather and light fancy leathers. The long-term programme of research includes investigations to find a suitable substitute for wattle bark, research on manufacture of tanning extracts from Indian vegetable tanned stuffs, tanning properties of the salts of zinconium, cerium and other rare earths, synthetic resin based pigment finishes, histology of raw hides and skins and bacteriological research on various operations involved in leather manufacture under the tropical conditions obtaining in India.

With the opening of these three institutes, the scheme of establishing eleven national laboratories will stand completed and a period of consolidation will set in. The tempo of research will gather momentum and the contributions of science to the industrial progress of the country will assume more significant proportions. At the same time, plans will be drawn up for further expansion of the field of utility of science and its applications including, where necessary, the establishment of specialised institutions in new fields. A Central Salt Research Station at Bhavnagar has already been decided upon and an electronics and radio engineering institute at Pilani is contemplated. These will constitute a part of the second phase in the application of science to the promotion of national welfare.

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South Arcot Lignite

By Dr. C. V. S. RATNAM, PH.D., Member, Experts Committee, Lignite Investigation

Part III.—Establishment of Iron and Steel Industry in the Madras State

It is well known that the Madras State has very large resources of high grade iron ores. The districts of Cuddapah, Kurnool, Tiruchirappalli, Salem and Arcot and Sandur State have large resources of hematite and magnetite ores, two varieties of iron ore, and the resources in the latter three districts alone are said to be of the order of 500 million tons or more. The Geological Survey of India feels that these deposits are large enough to need thorough investigation. The current production of pig iron in the Indian Union (population about 350 million) is around ten lakhs tons. It is also stated that the current Indian requirement for this material is around five million tons. It would be worthwhile to note in this connection the production of iron and steel in the most industrially advanced countries of today. The United States of America with a population of about 150 million (6·5 per cent of world population) and producing nearly 50 per cent of its goods, has an annual current output of nearly 100 million tons of iron and steel. The United Kingdom produces around 16 million tons and the U.S.S.R. about 25 million tons.

In spite of the large proved iron ore resources in Madras State, and the need for producing more iron and steel for the growing requirements of our country, no large-scale iron and steel industry exists at present in our State. This is mainly due to the lack of cooking coals in South India. Cooking coal is available only in the Bihar and Bengal coal-fields and the long distance and transportation difficulties have prevented the greater utilization of this coal in South India. As a matter of fact, existing annual demand of about 3,000,000 tons of coal in South India is now being met by imports from the North.

The discovery of large deposits of lignite, a member of the coal family, in South Arcot District in Madras State brings a new factor into the economy of South India. The deposits extending over a 100 square mile area are estimated to be around 2,000 million tons. If successfully developed and exploited, these lignite deposits will not only cater to all fuel needs, present and probable, but also pave the way for the establishment of an iron and steel industry in the Madras State.

Coke for Blast Furnace

It is the experience of the most industrially advanced countries in the world, that the blast furnace is the most economical way of producing large quantities of pig iron when iron ores and coking coal are available in close proximity or at economical prices. Some parts of the world like South India, Venezeula in South America, the north-west region in the U.S.A. do not have this advantage. The modern blast furnace requires coke for making pig iron from iron ores. South India and many other regions of the world do not have coking coal for making coke, but they do have lignite, a coal which does not give suitable coke for blast furnace use, when it is processed in traditional coke oven.

Researches have been directed in many countries on the utilization of non-coking coals like lignite for producing iron and steel, and the results can very favourably be utilised for the establishment of an iron and steel industry in Madras State. Processes using non-coking coals for reducing iron ores to metallic iron are termed as "direct reduction" processes. Two plants based on these processes are now working successfully in Sweden. The Swedish "disc type" iron has been in good demand wherever high grade steels are manufactured. During the last war, sponge iron plants (plants producing iron by the direct reduction processes) were in commission in the U.S.A., Japan and Germany.

A brief description of the two most successful direct reduction processes now operating in Sweden is given below :—

(1) *"Disc-Type" Process.*—Here the non-coking coal like lignite is placed in direct contact with iron ores and the whole material is heated to suitable temperature. The ore gets reduced to iron ; this is in the form of a disc as it comes out of the process and hence the name.

(2) *Wiberg Process.*—Here the reduction of iron ores is achieved by the action of reducing gases, carbon monoxide and hydrogen, on the iron ores which are mainly oxides. The carbonaceous material (lignite is excellent for this purpose), is gasified to give carbon monoxide and hydrogen. These gases in turn react with the iron ores and produce sponge iron useful for making steel.

These processes were successful in Sweden because :

(1) The raw materials were available ;
(2) No coking coal was available ;
(3) Power was cheap.

These direct reduction processes are said to be economical on a small scale, say about 50 tons of sponge iron per day.

Possibilities of Processes

The possibilities of these processes in South India are obvious :

(1) Iron ores are available in plenty.

(2) The successful development of lignite mines in South Arcot will result in the abundant supply of the reducing carbonaceous material.

(3) This will also give us enough fuel for producing cheap electricity.

A modification of direct reduction of iron ores by lignite has been suggested by Mr. Weber of Germany. In this process lignite and iron ores with a suitable binder, if necessary, are briquetted. These ore and lignite briquets are then carbonized. The carbonization of briquets yields two products :

(1) Carbonized briquets in which about 90 per cent of the iron ores are reduced to metalling iron.

(2) Low temperature tar from which valuable products from petrol to various fine chemicals could be obtained.

The carbonized briquets are later treated in an electrical furnace to give molten pig iron and coal gas which can be used as fuel in the process. Such a process may have possibilities in our State.

(*To be continued*)

The Krishna Anicut Tragedy

The Superintending Engineer, Vijayavada Circle, and the Executive Engineer inspected on September 8, 1952, the Krishna Anicut, as some damage to the Anicut was reported, at about 430 feet from the Sitanagaram end; the plough used for lifting the shutters could not proceed beyond the third set of shutters from this end. After inspecting the spot, they proposed to form a coffer dam by a scheme of ring bunding, in order to deal with the damage to the Anicut. Immediate attention was considered necessary, as the damage affected the supply of water to the delta ryots.

The Superintending Engineer, accompanied by the Executive Engineer, the Assistant Engineer, the Anicut Superintendent and others, proceeded to direct the operations in connexion with this ring-bunding on the next day, the 9th, personally. The details of the Superintending Engineer's scheme of ring-bunding are not clear, but it appears that the attempt was to form a ring bund with sand bags and also sink some old punts loaded with sand bags in some portions of the ring bund. The Departmental steamer "Havelock" was anchored upstream, and a light punt was anchored in the river bed and lashed securely with ropes to the steamer at the upstream and to the shutter plough and to one of the shutters at the lower end. The "J" Departmental patrol launch was by the side and near the lower end of the punt and was the means of access to the punts for the officers to and from the shore. It is gathered that Sri Vepa Krishnamurthi, the Superintending Engineer, and Sri D. Krishnamachari, the Executive Engineer, were in this light punt observing the river flow and directing operations.

Almost after dusk the Superintending Engineer appears to have directed a sand bag punt towed by a private steamer to dump some sand bags into the river. What happened when this punt approached the light punt is not clear. Everything seems to have occurred in a flash and has to be reconstructed from the poor evidence available. The mooring ropes of the light punt on which the Engineers were standing appears to have snapped and the punt seems to have tilted heavily to one side. The engineers were either thrown out; or probably they tried to jump into the "J" launch which was nearby, but were washed away by the stream. All the four vessels, the light punt, the sand loaded punt, the private steamer and the "J" launch, went over the Anicut through the gap through which water was flowing. The Assistant Engineer who was on the sand punt, in jumping into the private launch, sustained a fall and broke his spine.

In this catastrophe seven people consisting of the Superintending Engineer, the Executive Engineer, Sri Prasada Rao, the brother-in-law of the Superintending Engineer, the Anicut Superintendent and three other workers were missing. The Assistant Engineer who broke his spine succumbed to the injury soon after he was rushed to the hospital. The occupants of the private launch were not affected, even though much damage was sustained, but some of those in the "J" launch were thrown out into the river, and apart from those reported missing, five persons who were on the ill-fated punt and the "J" launch were rescued immediately after the accident.

The Chief Engineer, Public Works Department, and the Collectors of Krishna and Guntur were on the scene immediately they got intimation of the accident, and search and rescue operations were undertaken forthwith. The bodies of all the persons except that of one of the workers have been recovered, and the funeral of the Assistant Engineer and the cremation of the others were attended by all the local Government officials and were conducted with full State honours. The search has been intensified and continued for the body of the last missing person. The Chief Engineer is now exploring the possibility of repairing the damage to the Anicut.

Cotton Co4 Certification Scheme

Cotton variety Cambodia Co4, which includes Rajapalayam Uganda and Madras Uganda 1, is exempted from price control as per notifications issued by the Textile Commissioner, Bombay. A certification scheme is in operation in the Madras State to enable the ryots and the merchants to get the benefit of this exemption. As per conditions of the Textile Commissioner's notification (i) the seeds used for sowing should have been approved and distributed by the Department of Agriculture, Madras, (ii) the crop eligible for certification should have been rogued in the field by removing off-types and suspected plants; (iii) the minimum percentage of purity of plants in the field and the kapas and lint in the ginnery should be 95 and the staple of ginned produce should be one inch or more; and (iv) the ginning of the cotton to be certified should have been done under the supervision of the Department of Agriculture in gins specially licensed for the purpose.

The cotton crops eligible for certification should have been grown either as winter crops in the districts of Coimbatore, Salem, Tiruchirappalli, Madurai, Ramanathapuram and Tirunelveli during 1951–52 season or as a summer crop in the districts of South Arcot, Ramanathapuram, Madurai and Tirunelveli during 1952 season. Those who had grown Co4 crop with seeds supplied by the Department of Agriculture should have registered their field crop. If for any reason crops raised from the seeds supplied by the Department had not been registered, the produce from such crop will be eligible for certification from kapas stage, provided it satisfies the minimum purity of 95 per cent for kapas and lint, possesses a staple length of one inch or more, and enhanced certification fees of Rs. 10 per bale of lint of 392 lb. is paid. Even in case of crops raised from departmental seeds and registered, there is no guarantee for the issue of a certificate unless the above conditions of purity and staple length are satisfied.

Joint Services Wing Examinations

An examination for admission to the Joint Services Wing of the National Defence Academy for the 10th course, commencing in July 1953, will be held by the Union Public Service Commission, at Allahabad, Bombay, Calcutta, Delhi, Jullundur, Madras, Nagpur and Patna sometime in January 1953. Application forms and connected papers can be obtained from Headquarters, Sub-area, Madras.

Employees' State Insurance Scheme

Every person who has to earn a livelihood for himself or his family is exposed to certain risks which interrupt his income. These risks include sickness, invalidity, old age, employment injury, maternity, unemployment and death. Some of these contingencies, particularly sickness, injury and maternity, come as a double curse, viz., there is loss of income on the one hand and increase in expenditure on the other. Some people may have a little saving to fall back upon to meet these contingencies; but seldom does this saving prove adequate, and generally one has to resort to borrowings at exorbitant rates of interest.

There are various ways of combating these risks, e.g., joint family system, private charities and social assistance. In modern conditions, when prices are high and wages not high enough to support other persons, the best is collective effort of all members of society to insure against these risks, and this is known as Social Insurance in its various aspects such as health insurance, old age insurance, unemployment insurance, etc.

Is a vast country like India with its complex problems, all of them cannot be tackled simultaneously. A beginning had to be made somewhere. With this object in view, the Employees' State Insurance Act was passed by the Union Parliament in April 1948, to provide for certain benefits to employees in case of sickness, maternity and employment injury.

With the inauguration of the scheme at Delhi and Kanpur on the 24th of February 1952 by the Prime Minister, the Employees' State Insurance Corporation has commenced to administer in these two places the benefit provisions of the scheme. The scheme is expected to be extended in its full operation in the principal zones of the country before the end of 1954. Simultaneously from the abovementioned date, viz., the 24th February 1952, the provisions relating to Employers' Special Contribution payable by employers in the country have been brought into force in the whole of India except in the State of Jammu and Kashmir.

Scope.—The Act applies to all factories using power, employing 20 or more persons and engaged in a manufacturing process. "Seasonal" factories as defined in the Employees' State Insurance Act, 1948, and mines subject to the Indian Mines Act and Railway running sheds are excluded from the scope of the Act. In any factory all employees whether permanent, temporary or casual, manual, clerical or supervisory, other than those drawing a remuneration exceeding Rs. 400 per month, come within the purview of the scheme. Persons, however, in the Armed Forces do not come within the scope of the Act.

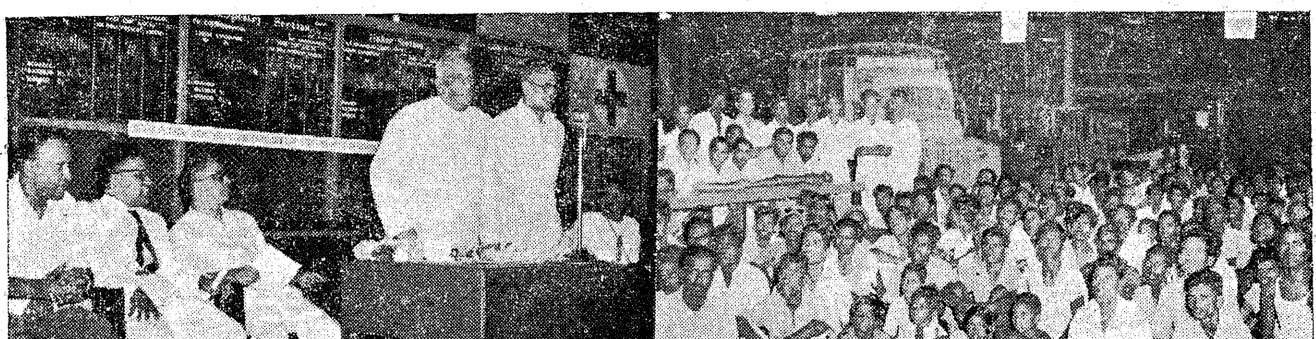
Administration.—To administer the provisions of the Act, the Employees' State Insurance Corporation has been set up under the Act with effect from October 1948. The Corporation which is a statutory and an autonomous body comprising representatives of employers, employees, the Central and State Governments, the medical profession and Parliament, functions with its head office in New Delhi. It is a quasi-Government organization under the control of the Ministry of Labour, Government of India. The Corporation has also set up five Regional offices in the country, one each in Madras, Bombay, Calcutta, Delhi and Kanpur. The address of the Regional office in Madras is: No. 162, Royapetta High Road, Mylapore, Madras-4. The Regional offices organise the collection of the Employers' Special Contribution and also undertake the spadework necessary before the benefit provisions of the Act could be brought into force in their respect areas.

The Corporation has a Standing Committee representing the same interests as constitute the Corporation with this difference, viz., that the total number of members are much smaller. There is also a Medical Benefit Council to advise on medical benefits. The employees, are well represented on all the three bodies. For Regional and local offices also, there will be Boards or Committees on which the employees and employers will have their representatives. It will thus be seen that the employees will have a full opportunity to express their views on the administration of the scheme in all its aspects.

BENEFITS PROVIDED UNDER THE SCHEME.—The Act entitles insured persons to the following benefits in areas where the benefit provisions of the Act (viz., Chapter V, *ibid*) are enforced:

(a) *Medical Benefit.*—Every insured person is entitled to claim free medical treatment at the State Insurance Dispensary to which he would be allotted. The doctor will also visit him at his residence if he is not fit to come to the dispensary. In serious cases hospital care will also be available.

CENTRAL LABOUR MINISTER'S VISIT: Sri V. V. Giri, Minister for Labour (Government of India) and Dr. U. Krishna Rao, Minister for Industries and Labour (Government of Madras) recently visited the Government Coach Building Factory at Chromepet Sri V. V. Giri is seen here addressing the workers of the Coach Building Factory.



(b) *Sickness Benefit.*—A qualified insured person, who has to abstain from work on account of sickness, will get a cash benefit equal to about half his daily wage per day for a maximum period of 56 days in any period of 365 days.

(c) *Maternity Benefit.*—A qualified insured woman will be entitled, at the time of her confinement, to get free medical treatment and also, so long as she does not work for remuneration, to claim maternity benefit at about half her average daily wage, or 12 annas a day, whichever is greater. The benefit is payable for 12 weeks of which not more than 6 weeks may precede the expected date of confinement.

(d) *Disablement Benefit.*—When an insured employee suffers an employment injury in the course of his work, he will get free medical treatment and also a cash disablement benefit roughly equal to half his wages for the period for which he is certified as unable to attend to work. For total permanent disablement, roughly half the wages will be paid as pension for life. For partial permanent disablement, a proportion thereof depending upon the nature of the accident, will be granted as life pension.

(e) *Dependents' Benefit.*—In the event of death of an insured person as a result of an employment injury, a pension roughly equal to half the average wages will be available to the widow and/or children provided that the widow's pension will not exceed three-tenths of the wage and each child's one-fifth.

SPECIAL FEATURE.—A special feature of this scheme is that wherever a substantial number of insured persons has been found to be residing, a separate dispensary or panel of doctors is being set up near by, so that, as far as possible, an insured person can be allotted to a dispensary or the panel doctor nearest to his residence. For certain outlying areas, mobile dispensaries are being provided.

EMPLOYERS' SPECIAL CONTRIBUTION.—With effect from the 24th February 1952, " Employers " are to contribute at the rate of ¾ per cent of the wage roll of their " Employees ". The employers in places where the benefit provisions apply, e.g., Delhi and Kanpur, at present will pay Employers' Special Contribution of 1½ per cent of the wage roll of the employees. The comparative lower percentage of the contribution in places other than Delhi and Kanpur is due to the fact that the employers will continue to meet their liabilities under the Workmen's Compensation Act, 1923, and the Maternity Benefit Act until the benefit provisions of the E.S.I. Act are brought into force in such places. This contribution, called the Employer's Special Contribution, is payable in respect of each quarter ending on the 31st of March, 30th of June, 30th of September and 31st of December. The contributions have to be paid within thirty days of the end of the quarter in respect of which such contribution is payable. In addition to this, every employer has to submit to the Regional office within 45 days of the close of the quarter a return in a form (Form Sc-2) specifically provided therefor by the Corporation. These contributions rounded off to the rupee should be paid into any branch of the Imperial Bank of India.

All " Employers " in the Madras State are under obligation to pay the Employer's Special Contribution as laid down in the preceding paragraph. For this purpose the Madras Regional Office of the Employees' State Insurance Corporation is the proper authority in respect of employers situated in the Madras State and also in the Hyderabad, Mysore, Travancore-Cochin and Coorg States. The benefit provisions of the scheme are expected to commence in one or two principal places in the Madras State with effect from some time in 1953. Until such date, the employers situated in Madras should continue to pay the ¾ per cent as Employer's Special Contribution as specified in the preceding paragraph. No contribution is payable by the " employees " during such period ; neither are the employees entitled to any benefits under the scheme. Until the full scheme is brought into force in any area, the employers in that area would have to continue their existing arrangements as regards their liabilities under both the Workmen's Compensation Act and the Maternity Benefit Act. When once the full scheme is implemented in an area, the employers and employees in that area would be placed on a par with the employers and employees in Kanpur and Delhi.

EXPENSES OF THE SCHEME.—The expenses of the scheme will be met mainly from contributions from employers and grants from the Central Government and the State Governments. However, in order to entitle the employees to get the benefits as a matter of right and not as charity, a small contribution is payable in places where the benefit provisions of the Act are brought into force, by all employees except those with very low wages. The employee's contribution is expected in all to meet less than one-third of the cost of benefits.

A SOCIAL SECURITY SCHEME.—Comprehensive social security schemes have been running in other countries successfully for a long time. This scheme is the first step towards social security in India. The small contribution the employees are asked to pay will entitle them to substantial benefits under the scheme as a matter of right. It is expected that in all respects the benefits will be considerably superior to what the majority of the employees have been getting so far. Even though the benefits may look modest today, the point the employees have to remember is that the scheme is THEIRS and that all the contributions—not only theirs but also those of the employers and the Central and State Governments—can be utilised only for providing benefits to them. There is no doubt that the scheme will be extended to provide medical care for their families rather sooner than later. As time passes and the scheme runs efficiently, similar schemes to cover other contingencies, viz., unemployment, old age and survivors' benefits would also surely follow, if this venture of social insurance succeeds.

Illicit Emigration to Ceylon

During the period from January to July 1952, there has been a series of raids, conducted by the officers of the Emigration Department, Government of India, to prevent illicit emigration to Ceylon by country crafts at various places. The places covered by the raids include Rameswaram, Dhanushkodi, Mandapam, Ramanathapuram, Pamban, Tondi, Tirupalakudi, Tuticorin, Nazareth, Tirunelveli, Madurai, Nagapattinam and Tharuvaikulam.

A total number of 668 illicit emigrants have been apprehended. Fifty-seven touts were also caught at railway stations and usual haunts of illicit emigrants. Of the 53 illicit emigrants caught in July 1952, 51 persons were prosecuted and fined. The cases against the others are pending.

Control Orders in Force on 25-9-1952

FOOD AND AGRICULTURE DEPARTMENT

MOVEMENT OF PADDY AND RICE WITHIN THE STATE ZONAL CONTROL ORDER.

G.O. Ms. No. 1068, *Food and Agriculture, dated* 1*st July* 1952.

In view of the revised Food policy a new Control Order has been issued regarding the movement of Paddy and Rice within the State. According to Order I of Notification I, the State is divided into six zones and the movement of paddy or rice or their products from one zone to another zone by mechanical means is prohibited except under a permit issued by the Collector of the districts concerned. Free movement of paddy or rice or their products within the zone is allowed. According to Order II of Notification I belt area restrictions already existing in the districts of South Arcot, Tanjore, Ramanathapuram and Anantapur on the movement of paddy or rice or their products are continued.

According to Notification II only landholders will be allowed to transport paddy or rice from the produce of their lands from one zone to another zone for their personal consumption. This new Zonal Control Order cancels the notifications issued in G.O. Ms. No. 550, Food, dated 18th June 1948 and G.O. Ms. No. 478, Food, dated 27th May 1948.

The Zonal Control Order issued in G.O. Ms. No. 1068, Food and Agriculture, dated 1st July 1952, has been amended due to the inclusion of Hosdrug Sub-taluk of South Kanara district in the sixth zone comprising Malabar and the Nilgiris. (G.O. Ms. No. 1216, Food and Agriculture, dated 26th July 1952.)

By G.O. Ms. No. 1346, Food and Agriculture, dated 20th August 1952, the Zonal Control Order has been amended to prohibit the movement of paddy, rice and their products, even by non-mechanical means of conveyances from zone to another zone within the State except headloads by peasantry up to one maund for personal or family use.

PLYING OF MOTOR VEHICLES AT NIGHT

G.O. Ms. No. 1306, Food and Agriculture, dated 9th August 1952: In supersession of the Order issued in G.O. Ms. No. 393, Food, dated 3rd April 1947, the Government have issued an Order prohibiting the plying of motor vehicles carrying paddy, rice, millets and their products, excluding products of foodgrains which are used as cattle foods, namely, rice bran, wheat bran, bran of husks and millets and maize, between the hours of 7 p.m. and 6 a.m. on any road or land situated in a district which is notified by the Collector in the District Gazette.

ORDER PROVIDING POWERS TO REQUISITION STOCKS OF FOODGRAINS.

This Order extends to the whole of the State of Madras. This empowers the Government to issue directions to the Collector or any other officer to requisition stock of foodgrains whenever the Government consider it necessary to do so. This also empowers Collectors to call for declaration of stocks of foodgrains from any person.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

SALT PRICE CONTROL ORDER, 1947.

This Order specifies the maximum ex-factory wholesale price of salt per imperial maund (exclusive of the cost of the gunny and cess) for each of the salt-producing districts of the State. The price varies between 12 annas to 15 annas per imperial maund. The Collectors of the districts have been empowered by the Central Government to fix the wholesale and retail prices of salt for each consuming area within their respective jurisdictions, subject to any directions issued by the State Government. The wholesale price fixed for each consuming area includes the ex-factory price, cost of the gunny, transport charges, handling charges and wholesaler's profits of 6½ per cent. The retail price for each consuming area is fixed suitably on the basis of wholesale price fixed for that area. No producer, wholesaler or retailer, should sell salt at a price exceeding the notified price. Failure to comply with any of the instructions will render a dealer punishable in a Court of Law.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

THE COTTON CROP (COMPULSORY GROWTH WITH CHILLIES) ORDER, 1950.

This Order extends to the whole of the State of Madras. At present the Order has been made effective only in the districts of Guntur, Krishna, East Godavari and West Godavari and according to this no person can cultivate the rainfed crop of chillies in these districts except as a crop mixed with cotton in the proportion of not less than one line of cotton plant to every 14 lines of chilli plants.

THE MADRAS MANURE DEALERS' LICENSING ORDER, 1949.

The Madras Manure Dealers' Licensing Order, 1949, has been re-issued as the Madras Manure Dealers' Licensing Order, 1949.

An amendment issued on November 25, 1950, lists the names under which manure materials are sold and the definitions implied in the sale of manure articles against those particular names, and notifies that the sale of an article under any of the defined names shall constitute a warrant that it accords with the implied definition. Further, the particulars of the implied definition should be marked on the manure bags, in addition to the name under which the manure is sold, the gross weight and the name of the manufacturer.

An amendment issued on December 29, 1950, gives the enhanced rates per annum of licence fees for the different classes of licences. The question of revising these rates is under the consideration of the Government.

Another amendment, dated December 29, 1950, explains that: (1) in cases where a mixing or miller's licence has been obtained, no other licence under the Order is necessary; (2) mixing or miller's licence will have to be taken

by the licensee in respect of each centre where mixing or crushing is carried on ; and (3) in the case of manure mixtures, a non-recurring fee of Rs. 50 for each mixture shall be payable. If the analysis of any mixture is changed, it will be regarded as a new mixture for the purpose of this Order and a fresh registration fee shall be payable.

An amendment issued on 24th January 1951 states :

"Every licence shall ordinarily be renewed before the expiry of its term ; but applications for renewal will be received up to 30th June of the financial year for which the renewal is applied for, on payment of the prescribed fee and in addition, a penalty of rupees two for each such application."

According to an amendment issued on January 5, 1952, the approved form of licence issued under this Order will provide in future suitable columns for incorporating the following details at the time of the renewal of licences :—

1. Year for which licence is renewed ;
2. Date of renewal ;
3. Fee ;
4. Chalan number and name of treasury ;
5. Penalty, if any ;
6. Chalan number, date and name of treasury ;
7. Signature of licensing authority ; and
8. Remarks.

The three classes of licences issued under this Order will, in future, be issued in three distinct colours as shown :

Class of licence.	*Colour.*
1. Oil Mills	Green.
2. Dealers in manure	Red.
3. Firms engaged in manure mixing trade.	White.

G.O. Ms. No. 1013, Food and Agriculture, dated June 23, 1952 : Certain amendments issued specify the principles and conditions on which the licensing authority can either refuse to grant a licence under the above Order or cancel one which has already been issued.

By an amendment issued in G.O. Ms. No. 1361, dated 22nd August 1952, for explanation on (1) under Clause 4, the following is substituted : "In cases where a mixing or millers' licence has been obtained, no dealers' licence is necessary for the particular place of business."

THE MADRAS MANURE MIXTURE QUALITY AND PRICE CONTROL ORDER, 1950

According to this Order only firms of standing dealing in manure and approved by the Government of Madras on the recommendations of the Fertiliser Advisory Committee through the Director of Agriculture shall manufacture and market manure mixtures. The firms dealing in manure shall legibly mark on the manure bags the following particulars :—

(*a*) The registered brand and name of the manure mixture ;

(*b*) The organic and inorganic, total P_2O_5, W.S. P_2O_5, K_2O contents of the manure mixture denoted by the letters N, P (T), P (S) and K, respectively.

(*c*) The registered name of the firm.

(*d*) The crop or crops for which the manure mixture is suitable ; and in the case of a general mixture for all crops the expression "All Crops".

(*e*) The gross contents by weight in pounds.

The manure mixture will have to be sold at the prices approved by the Joint Director of Agriculture. The fertiliser mixture shall be put up in the market in sealed bags, to obviate the contents being tampered with without breaking the seal. The firms dealing in manure shall not alter the ingredients, or the guaranteed analysis, or the price of the manure mixture, except with the previous approval of the Joint Director of Agriculture.

THE MADRAS OILCAKE (MOVEMENT CONTROL) ORDER, 1951

The Madras Oilcake (Movement Control) Order, 1949, has been annulled, and restrictions on the movement of oilcakes, both within and outside the State, have been removed.

MADRAS FOODGRAINS CONTROL ORDER, 1947

This Order exercises control on the purchase, sale and storage beyond certain limit (i.e., 10 maunds in the case of purchase, sale and storage for sale and 15 maunds in the case of storage for purposes other than those of sale) of the following foodgrains and the products thereof by a system of licensing :—

Wheat, paddy (rice in the husk) including fried paddy and parched paddy, rice (husked) including beaten rice, puffed rice and parched rice, cholam (Jowar), cumbu (Bajra), ragi, korra, maize (zea mays) and rye. For the grant of a licence under this Order for dealing in foodgrains, one must have been in the foodgrains trade at any time prior to 22nd June 1942, the date on which this Order first came into force.

A licence fee of Rs. 24 per annum is chargeable for each licence or exemption certificate issued or to be issued under the Order.

The Commissioner of Civil Supplies or an officer authorised by him in this behalf may in special cases condone any delay in the payment of the said fee up to any period specified by him on payment of a penalty of Rs. 2 in each such case.

Every applicant should produce satisfactory evidence to prove that he was in the foodgrains trade during the period prescribed. He should not also have been found guilty at any time of hoarding or black-marketing offences under the Control Orders or even strongly suspected of having indulged in such anti-social activities. Harijans, co-operative societies, hand-pounding concerns, ex-abkari contractors, ex-servicemen's associations, etc., are exempted in deserving cases from the conditions regarding the previous business standing.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

MADRAS FOODGRAINS (MOVEMENT CONTROL) ORDER, 1947

(G.O. Ms. No. 720, Food, dated 14th June 1947.)

This Order controls the movement of foodgrains from places within the State of Madras to places outside it by a system of permits created in certain cases and under certain conditions specified in the Order. Permits under the Order are issued by the Commissioner of Civil Supplies,

Madras. A week's ration at the prescribed scale forming part of the luggage of bona fide travellers and grains intended for bona fide sowing purposes granted under a certificate issued by an Officer of the Madras Agricultural Department not below the rank of District Agricultural Officer and foodgrains transported under Military Credit Notes are exempted from the operation of the Order.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

This Order has been extended to apply in the case of imports of foodgrains. A permit is necessary for the import of foodgrains into the State.

The Order has been amended exempting Defence Services personnel who go on leave to carry rations under the certificates issued by the Military authorities up to the quantities specified therein.

The Madras Foodgrains (Movement Control) Order, 1947, has been amended in G.O. Ms. No. 1292, Food and Agriculture, dated August 6, 1952, due to the removal of the ban on the inter-State movement of Pearl barley powder and indigenous barley without husk. The Movement Control Order has also been amended in G.O. Ms. No. 1323, Food and Agriculture, dated August 13, 1952, as the ban on the inter-State movement of semolina and self-raising flour imported from foreign countries has been lifted and the price restrictions removed.

MADRAS FOODGRAINS PROCUREMENT ORDER, 1947

Under the Madras Foodgrains Procurement Order, 1947, the foodgrains transported illegally without a permit will hereafter be seized and confiscated together with the containers ~~and coverings thereof and the animals, vehicles,~~ vessels or other conveyances used in carrying the said foodgrains (G.O. Ms. No. 2258, Food and Agriculture, dated 24th November 1951).

THE MADRAS FOODGRAINS (RESTRICTED PLEDGING WITH BANKS) ORDER, 1950

This Order imposes certain restrictions on the pledging of the procured stocks of paddy and rice with banks by the procuring agents in the State.

THE MADRAS SUGAR DEALERS' LICENSING ORDER, 1951

This Order directs that wholesale dealers for sugar should be licensed and that permits either from the Commissioner of Civil Supplies or his nominee are necessary.

SUGAR PRICE CONTROL

The Collectors have been empowered to fix the wholesale and retail prices of sugar.

MANURE MOVEMENT CONTROL ORDER

By an Order, dated 18th April 1951, restrictions on inter-State movement of fish-meal, fish-guano, bones, bone super, bone-meal, hoofs, horn, hoof-meal or horn-meal have been removed.

THE MADRAS FLOUR (USE IN MAKING PASTE OR STARCH) PROHIBITION ORDER, 1947

This Order prohibits the use of flour for making paste or starch except under a permit issued by the City Rationing Officer, Madras, District Supply Officer, etc., or an authorization given by the Government.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

ORDER RELATING TO THE RESTRICTIONS ON THE OUTPUT OF BRAN WHEN MILLING WHEAT.

(G.O. Ms. No. 940, Food, dated 22nd August 1947.)

According to this Order, all flour mills situated within the State of Madras shall, when milling wheat, restrict the output of bran to five per cent of the whole wheat.

Prosecutions for the infringement of the conditions of this Order should be launched only with the previous sanction of the Collector concerned.

DEVELOPMENT DEPARTMENT

THE COTTON CONTROL ORDER, 1950

This Order provides control over contracts relating to sale or purchase of cotton and over sale of cotton to specified persons at specified prices.

THE MADRAS DRUGS (CONTROL) ACT, 1949

In order to ensure that essential drugs continue to be sold at reasonable prices even after devaluation, the Madras Drugs Control Act, 1949, was passed by the Government. The Act provides for the control of the sale, supply and distribution of drugs in the Madras State.

RURAL WELFARE DEPARTMENT

THE MADRAS KHADI (DEVELOPMENT) ORDER, 1949

The provisions of the Order prohibit a person to carry on business as a producer or dealer of hand-spun yarn and Khadi in the State of Madras except under and in accordance with the terms and conditions of a licence issued to him for the purpose.

Further, the Order states that no person who is a producer or a dealer in mill-made yarn or cloth woven out of such mill-made yarn shall carry on the business of a producer or a dealer in hand-pound yarn or Khadi. No hawker shall be licensed to deal in hand-spun yarn or Khadi. The sale price of Khadi should not exceed the aggregate of the cost of production of the cloth plus $15\frac{5}{8}$ per cent thereof.

PUBLIC DEPARTMENT

THE MADRAS BUILDINGS (LEASE AND RENT CONTROL) ACT, 1949

This Act seeks to regulate the letting of residential and non-residential buildings and to control the rent for such buildings and to prevent unreasonable eviction of

tenants therefrom in the State of Madras, and applies to the City of Madras, all Municipalities within the State, and such other areas as may be notified in the Gazette by the Government of Madras from time to time.

To remove certain practical difficulties which were experienced in administering the Act, the Act has been amended in certain respects. The amendments have come into force from May 1951. The important amendments that have been made have been explained in Press Note No. 71, P.W. (I. & P.), dated May 1951.

Whereas section 6-B (1) of the Madras Buildings (Lease and Rent Control) Act, 1949, as amended by Act VIII of 1951, provides for the deposit of rent when the address of the landlord or local agent is not known and when the ownership is under dispute, there is no provision in the Act to deposit the rents of buildings in cases where the addresses of the landlords are known but they refuse willfully to receive the rent. Under section 6-A (4) of the Act, the tenant is bound to continue to remit the rent to the landlord by money order after deducting the money order commission. But if the rent so remitted by money order is consistently refused by the landlord and the money is thus returned to the tenant, it will accumulate in the hands of the tenant with the possible risk of his not being able to pay the amount in lump sum when demanded by the landlord. The Government who are the statutory tenants of the building are liable for payment of rent to the landlord. It is, therefore, in the interest of the Government to see that the refused rent which is returned to the tenant is caused to be deposited by him so as to be available for payment to the landlord whenever he demands it. Therefore the amounts returned to the tenant on the refusal of the money orders should be caused to be deposited by the tenant to the credit of the Government in the Reserve Bank or the Treasury under "Revenue Deposits."

By G.O. No. 1600, dated 16th June 1952, the following amendments have been issued to the Act :—

1. In sub-rule (3) of Rule 6 for the words "at 8 annas", the words "at Re. 1 and annas 7" are substituted.

2. In sub rule (2) of rule 22, for the words "a fee of annas eight" the words "a fee of rupee one and annas seven" are substituted.

RESETTLEMENT OF RELEASED ARMY PERSONNEL

An Order, dated 12th April 1951, seeks to implement the Central Government suggestion that demobilised military personnel should be given every preference in all avenues of service. In every case where an ex-soldier is found *prima facie* suitable for employment under this Government, the relaxation of technical restrictions including age bar will be considered.

By an amendment issued in G.O. No. 146, Public (General) Department, dated January 24, 1952, the following note is added :

Note.—The Reserve Bank or the treasury will not receive the deposit unless the Controller or the appellate authority, as the case may be, or any person authorised by such Controller or appellate authority in this behalf, certifies on the chalan accompanying the deposit that the deposit may be received.

PUBLIC WORKS DEPARTMENT

CEMENT CONTROL ORDER, 1949

This Order controls the sale of cement.

By an amendment issued on 3rd April 1951, licensed cement factories are authorised to sell up to one wagon load (not exceeding 25 tons) direct to each individual consumer without a permit, such sales not to exceed 20 per cent of their monthly production.

Another amendment issued on 3rd April 1951 requires licensees to submit particulars of such free sales of cement. Licensees shall not default in selling cement to permit holders.

Amendments issued to the Cement Control Order on 30th May 1951 provide that :

the price of all Portland cement produced in India, exclusive of the cost of containers, if any, shall not exceed Rs. 71 per ton in full wagon loads f.o.r. destination ;

the actual cost of gunny bags, subject to a maximum of Rs. 26 per ton of cement, if supplies wholly in new gunnies, may be charged, in addition to the price of the cement specified above ;

the price leviable for the cost of packing for supplies in paper bags or old gunny bags, which may be settled between the purchaser and the supplier, shall not exceed Rs. 26 per ton of cement.

An amendment issued on 1st November 1951 provides further that an insurance fee of Re. 0–10–0 (annas ten) per ton may be collected by the supplier when the cement is despatched in open wagons with the concurrence of the purchaser.

Harijan Welfare School

Sanction has been accorded to the opening of a Harijan Welfare School at Palliagaram village in Maduranthakam Taluk in Chingleput District during the current year. As usual, midday meals will be supplied to the students belonging to eligible communities, studying in the schools.

Handboring Sets and Power Drills

The Government have directed that soon after an application for the allotment of hand-boring set or a power-drill is registered, a copy of the list should be provided by the Industries Department to the party, so that he can clearly anticipate when his turn of priority comes.

This action has been taken, in order to obviate any criticism in respect of the order of priority of applications registered in the districts, for the allotment of hand-boring sets and power drills.

More Honorary Medical Officers

The Government have sanctioned the creation of three additional posts of Honorary Medical Officers and 21 additional posts of Honorary Assistant Medical Officers in the various Government medical institutions in the Madras City and in the mofussil.

REPORT ON AN ENQUIRY INTO THE ECONOMICS OF PRODUCTION OF MILK IN MADRAS CITY

By Dr. B. Natarajan, Economic Adviser to the Government of Madras

Price, annas eight Pages 52

In 1949 an investigation was undertaken to examine the problems of the milkman's profession and to study the economics of milk production in Madras City. For the purposes of the enquiry the City was divided into five zones—Rayapuram, Perambur, Egmore, Triplicane and Mylapore—and random samples were listed for questioning. Despite difficulties encountered in the course of the survey, the investigating staff recorded significant facts, from which useful conclusions were drawn.

The *Report* details previous studies on the subject, scope and method of enquiry, cost of production and income from sale of milk, the Bombay Plan, the Five-Year Plan and the Madras Plans. In brief, the problem in Madras centres round these points: (i) uneconomic production, (ii) inadequate production and (iii) appallingly low production. A general policy for improvement is outlined: (*a*) Supply of cattle-feed at economic rates; (*b*) improved facilities for the salvage of dry cows; (*c*) better breeding of animals; (*d*) free medical facilities for milch cattle and (*e*) grants or interest-free loans to remove unhygienic conditions in cattle-yards. The proposals also urge the organization of milkmen and the constitution of a Milk Marketing Board.

Six charts and 13 appendices enhance the documentary value of this very useful publication.

Books received: Report for 1951–52 of the Ramakrishna Mission Vidyalaya, Perianaickenpalayam, Coimbatore District. —S.

INDIAN AGRICULTURAL WAGES STATISTICS

Agricultural labourers constitute about one-third of the rural population in India, but very little reliable data had so far been available in respect of their wages and living conditions.

A new publication, entitled *Indian Agricultural Wages Statistics*, 1950, recently brought out by the Directorate of Economics and Statistics of the Ministry of Food and Agriculture, is intended to fill this gap. For the purpose of these statistics, agricultural workers have been classified into (1) skilled labour, (2) field labour, (3) other agricultural labour and (4) herdsmen. The wages of men, women and children have been given separately. Besides the amount of maximum and minimum wages [...] State-wise, the months of the year during which [...] prevailed in the case of each type of labour have been indicated.

The publication will have a special interest for [th]ose engaged in a study of socio-economic problems of [a]gricultural labour.

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ERADICATING INFECTIONS OF BOOKWORM

The Indian Bookworm Beetle, *Gastrallus Indicus Reitter*, bores into books, cardboards and palm-leaf records and as such, does considerable damage to libraries and other places where records are stored.

A new booklet entitled ' Control of the Indian Bookworm Beetle, *Gastrallus Indicus Reitter* (Coleoptera: Anobidae) by M. L. Roonwal and P. N. Chatterjee, published as *Indian Forest Records* (New Series)--Entomology--Vol. 8, No. 6 (price as. 12 or 1 sh.) gives a method for eradicating the infection of this insect in libraries.

The method consists in exposing the infected material to dry heat in an electric oven at 60 degrees centigrade for four hours. Generally, the temperature and duration of exposure should vary with the thickness of the book or paper bundle. In the Indian plains, the heat of the sun an also be utilised for the purpose, provided the right mperatures are ensured.

As a regular routine measure, the almirahs and shelves in libraries should be regularly cleaned and charged with a liberal quantity of naphthalene balls, at least once a year, preferably in the early spring. This preventive measure will greatly reduce the incidence of attack by the beetle.

INDIAN COFFEE STATISTICS

The Directorate of Economics and Statistics in the Ministry of Food and Agriculture have brought out the twenty-fifth issue of the *Indian Coffee Statistics* relating to the coffee years 1948–49 and 1949–50.

The publication brings together statistical information about the area under coffee cultivation, number of plantations and persons employed, imports and exports and wholesale prices. A number of useful charts illustrating production and consumption of coffee in the country have been included.

Chemical Examiner's Department

he following are the salient features of the administra- ti of the Chemical Examiner's Department in 1951 :—

Human poisoning—The total number of human oning cases examined during the year under notice was with 4,417 articles, as against 801 cases with 3,777 ticles in 1950. Poison was detected in 414 cases. Among poisons, opium heads the list with 61 cases, while hol was responsible for 52 cases, oleandar for 43 s, nitrite for 37 cases, copper for 31 cases and datura 27 cases.

A few cases of human poisoning are given below:

A girl, aged about 18 years, is stated to have taken acid, mistaking it for "Omam Water" (*Aqua hotis*) from a bottle in an almirah, for a complaint of in the abdomen. She was taken to a hospital in a of restlessness with the whole of the mouth cavity, nd inner aspect of the fingers of the left hand burnt. uric acid was detected in the viscera of the girl.

A male, aged about 55 years, ate some tiffin given by a an along with four children, two of whom were his dchildren. The woman also took the tiffin. All the people started vomiting and purging. They were ght to a hospital, where the man died and the others vered. Arsenic was detected in the viscera of the sed.

boy, aged about 13 years, took tiffin at home at n. on a particular day and was playing in the At about 9 a.m. a co-worker in a dyeing factory e boy to go with him to the factory. While ing the floor in the factory, the boy vomited, felt is and fell down. He was taken to a hospital but ed before reaching the hospital. The viscera of the was sent for examination and nitrite was detected stomach and contents and in the intestines and

Animal poisoning.—Sixty cases of animal poisoning were received during the year with 266 articles, as against 39 cases with 188 articles in 1950. Poison was detected in 34 cases. The poisons detected were arsenic, zinc phosphide or phosphine, oleander and opium.

Stain cases.—A total of 1,169 cases were examined, as against 974 in 1950. The total number of articles examined was 6,281. In 1,042 cases examined for blood, blood was detected in 990.

Miscellaneous Medico-Legal cases.—There were 243 cases with 1,172 articles under this heading, as against 250 cases with 999 articles in the year 1950.

General analyses.—Fifty-one articles were examined under this heading during the year under report as against 156 articles in 1950. These comprised 39 articles fo the Madras Government, one article for the Government of India and 11 articles for private parties.

Sale of Compost Manure to Agriculturists : No Sales Tax on Local Bodies

The Government have directed that sales by the Corporation of Madras, municipalities and other local bodies to agriculturists and Agricultural Co-operative Societies, of compost manure, manufactured by them, be exempted from liability to sales tax for the period beginning from the commencement of sales in each case and ending on March 31, 1953.

This action has been taken on representations by the Corporation of Madras and other local bodies in the State.

receive
authority
by such
certifies
deposit

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